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THE VETERINARY JOURNAL

A MONTHLY REVIEW OF VETERINARY SCIENCE

Est. 1875

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The Veterinary Journal.

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(*Article by* A. J. Wilsdon)

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CHARLES VIAL DE ST. BEL

(from an old print)

Charles Vial de St. Bel was the first Principal of the Royal Veterinary College. He died in 1793 after having occupied the position for about two years. He was a martyr to veterinary science—the disease of glanders from which he died having been contracted from a horse during his work.

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Veterinary Adviser to various Overseas Governments; late Chief Veterinary Officer to the Corporation of the City of London

NOVEMBER, 1937

Editorial

THE REJUVENATED ROYAL VETERINARY COLLEGE.

THE Opening Ceremony by Their Majesties the King and Queen of the rejuvenated and re-built Royal Veterinary College of London will ever be remembered, by the fortunate few who were permitted to be present, as a ceremony well fitted to the occasion. By permission of the College Authorities, we are reproducing the official details of the early history of the place, which were set out in a very charmingly arranged and neatly bound brochure, a copy of which should be in the possession of every one of its old students who take a pride in their *Alma Mater*.

In it will be found the early history of the College from the date of its foundation in 1791 and the steps which led up to the original building, to the present roomy and well-equipped laboratories and hospital premises in which those who are fortunate enough to hold appointments at the present time will now be able to undertake research and teaching work.

Originally, when built, the College was right in the country, so much so that the students (who "lived in" at that time) had to ask permission "to go to London," and one cannot help but wonder what these selfsame students would say if permitted to come back to take a look at the altered surroundings.

We are also fortunate in being able to present to our readers some most excellent illustrations, which include the first Principal (Charles Vial de St. Bel), and the original appearance of the exterior and of the internal quadrangle. The building was then surrounded by fields, having the River Fleet running

alongside—a striking contrast to the crowded and much built-over Camden Town as it is at present. Probably the fogs in those days were of much the same unpleasant density as now, although not perhaps containing quite so much smoke and soot.

The course then was only of two years' duration, with no long vacation, the original number of students being only fourteen ; and these young men had to report their presence in the College before eight o'clock at night, and obey in many other respects the strictest rules and regulations. Principal St. Bel unfortunately contracted glanders, from which he died in 1793. His death was a great blow to the College and to this young profession which was about to come into being ; and it was only after a very careful search for a suitable successor that the choice fell upon Mr. Edward Coleman, a notable surgeon in his day, who eventually accepted the post. Coleman died in 1840, and was succeeded by his chief assistant, William Sewell, who remained there until his death ten years later. His successor was Charles Spooner, who also occupied the Chair of Anatomy, and on his demise James Burt Simonds accepted the Principalship. Simonds came to London fresh from the successful working of a large agricultural practice, and under his régime there was established the original foundation of the courses of lectures on the diseases of farm animals and treatments which are given at the present day. Upon his retirement, in 1881, William Robertson, of Kelso, another country practitioner, was appointed, and after his sudden death in his chair from heart disease, in 1888, Professor George Brown, the Chief Veterinary Adviser to the Ministry of Agriculture, became Principal, with Professors Axe and Penberthy as colleagues.

Upon the retirement of Sir George Brown, in 1894, Dr. (now Sir) John MacFadyean, who had already made a name as a teacher of pathology in the Dick Veterinary College, came down from Edinburgh, and remained in office until 1927, when he was succeeded by the present retiring Principal and Dean, Professor Sir Frederick Hobday. In connection with the subsequent appointment of the latter to this post, it may be of interest to report an almost prophetic sentence uttered by Sir John MacFadyean when bidding farewell to Professor Hobday on the occasion of his resignation of the Chair of Materia Medica and Therapeutics in 1899 to take up private practice. As he shook hands he said : "Goodbye, Hobday, I am sorry you are going. I thought to leave you here." Twenty-eight years later Major Hobday was selected by the College Governors to return to his *Alma Mater*, as the Principal and Dean, in direct succession to Sir John.

Numerous details of the College which we publish in this issue will have particular personal interest for many of its older graduates, who (if they have not already done so) will much enjoy a visit to see for themselves the transformation which has now taken place in their *Alma Mater*.

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H.M. The King officially opening the New Buildings at the Royal Veterinary College.

(On the left of His Majesty is H.M. The Queen; on the right of the King is Sir Merrik Burrell (*standing*); and on the extreme right are H.R.H. the Duke of Gloucester and the Rt. Hon. W. S. Morrison, *Minister of Agriculture and Fisheries*.)

THE HISTORY OF THE ROYAL VETERINARY COLLEGE.*

THERE is striking significance in the fact that the impulse to which the Royal Veterinary College owes its existence found its inception in a spontaneous movement among the farmers of Hampshire. In 1783, the Odiham Agricultural Society, which comprised the farmers between Basingstoke and Aldershot, where the little village of Odiham lies, began to discuss ways and means for encouraging the study of scientific farriery.

It is worthy of note that this society of farmers felt the need for this early form of veterinary work so much that, in 1788, they published an appeal lamenting that there was not yet in England any establishment that could give them the desired improvement in farriery by a regular education in that science upon medical and anatomical principles. The Society expressed its intention, if sufficient funds could be raised, of sending two or more students to be trained at that then famous Alfort School, near Paris. Farriery had by then attained upon the Continent something of the dignity of a science and study. Schools were in being at Paris, Lyons, Vienna and Hanover, and it is not without interest and possible significance, in view of later developments, that at that time our own monarch, King George III, was also Elector of Hanover.

It was shortly after this determination of the Odiham Agricultural Society that Charles Vial St. Bel, of the Royal School at Lyons, came to England and outlined a plan for establishing an institution in this country to teach the science of veterinary medicine. He returned to France, but early in the following year a meeting was convened at the Coffee House, Bond Street, under the Presidency of His Grace the Duke of Northumberland, which was attended by noblemen, gentlemen and scholars, who resolved to erect themselves into the Veterinary College of London; and Mr. St. Bel was appointed Professor of the College.

With the realisation of this plan and the actual establishment of the College, the Odiham Society, which had done such splendid pioneer work, magnanimously decided to drop their project, send all their papers to the new College and direct their subscribers to transfer their subscriptions to the new institution.

These proceedings were of relatively small importance in the days in which they took place, but they were vital in the history of the fine modern building which His Majesty the King opens to-day. The letter written by the Duke of Northumberland to Mr. Huntingford, the secretary of the important meeting which brought the College into being, will, in these circumstances, be of interest to those who know the Royal Veterinary College in these days of King George VI. His Grace of Northumberland wrote:

* This most interesting account of the College, taken from the brochure issued to commemorate the official opening of the new buildings by H.M. The King on November 9th, 1937, is published by permission of the Royal Veterinary College.

"As the plan for establishing a Veterinary College seems now to be considerably amended, especially by the determination of annually publishing their *Transactions*, the Duke of Northumberland will be happy to promote so useful an undertaking, and should feel himself obliged to Mr. Huntingford if he will let him know the largest sum that any person has subscribed, as he shall be desirous of giving effectual support to a plan which now appears calculated to be of the greatest utility to the public. Mr. Huntingford will please send as soon as he can the answer to Northumberland House, that the Duke may pay his subscription."

His Grace was informed that the largest sum at present subscribed was twenty guineas and that several noblemen had not yet determined upon the amount they would give. The Duke replied:

"Sir,

"As you inform me that no person has subscribed more than twenty guineas, in order to show my desire of being useful to the intended Institution, I have enclosed a draft on Messrs. Hoare, of Fleet Street, for fifty guineas, and made it payable to you or your order. I must therefore desire you, Sir, to apply the above sum to the use of the Veterinary College as my subscription. . . ."

And so the Royal Veterinary College obtained its first powerful patronage, and at 6 o'clock in the afternoon, on Friday, April 8th, in the year 1791, the first Constitution was adopted and many influential noblemen and gentlemen were unanimously elected as the first officers of what was to become the leading Veterinary College of a greater British Empire than was ever thought of in those far off days of George III.

The new College was wonderfully fortunate in the choice of its first Professor. Charles Vial St. Bel was a Professor of Veterinary Medicine in the Royal School at Lyons, which was the first veterinary college in the world. St. Bel was an outstanding man of wide vision and great scholarship, a worthy preceptor of an institution that was destined to become great. St. Bel laid foundations in more ways than one. As Principal he saw the erection of the first building, in 1791, upon the site which the College occupies to-day, and some of which were still housing the work of the College so lately as ten years ago.

These were the days of Dickens, who lived not far away, at Somerstown. The College itself was right in the country, London came no nearer than Holborn, and the little building stood in the meadows beside the River Fleet, which still runs in its vast pipe below part of the College site. A little bridge crossed what was then a pleasant river opposite the College and led to the Principal's house upon the other side, and close by was a track that led to Highgate Village. The great roads to the north ran within sight of the College. Quiet nights in that neighbourhood from time to time were interrupted by the command to "stand and deliver," and the merry notes of the coachman's horn would make early

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students of veterinary medicine look up from their tasks and think of other things than the science of farriery.

Imagine cows grazing over the land occupied by the vast goods yards that you can see from the roof of the College building to-day. Picture summer days and the sound of reapers at their work coming from the meadows on the other side which now resound to the busy traffic of Camden Town. The first equine patients of the College grazed in the fields round the building and waded in the river which now runs in a subterranean pipe.

There were fourteen students in those days, and the course was of two years' duration. There were no vacations, and discipline was of the strictest nature. We wonder how it would be appreciated by the students of the College to-day! Visits to the neighbouring town of London were strictly forbidden. In the light of modern conditions, at any rate, the life of a veterinary student in the days of George III was one of rigid discipline. They lived in the houses of the teaching staff. They had to be within the College before eight o'clock at night, and rigid rules and regulations bound their every movement.

One singular thing emerges—and it is tribute to that great man, St. Bel—that the College curriculum of those days, short though it was, comprised, as far as the science of the times allowed, the main principles of the College course to-day. When you think that this was long before the age of the "ologies," it is remarkable testimony to the ability, talent, foresight and scholarly enthusiasm of Charles Vial St. Bel, whose death in 1793 was well nigh a death blow to the institution that was so near to his heart.

St. Bel was the only really trained veterinary surgeon in this country at the time, and his death was a set-back from which it took the College very many years to recover. The death, too, was one of the great tragedies of science, for St. Bel unquestionably died of glanders, which he contracted from a horse. No man was ever more a martyr to the science to which his life was devoted than Charles Vial St. Bel. He died, as he had lived, at work for the development of veterinary knowledge.

There followed a long and anxious search for a new Professor, whilst the work of the College was carried on by the senior student. Then came the advent of Edward Coleman, a notable surgeon of his day, but whose only apparent claim to be the Principal of a Veterinary College was the fact that he had written a thesis on the horse's eye as a matter of academic interest. He was, however, a friend of notable surgeons of the time and an able man who was a steady, sound principal under whom the College made very considerable progress.

Among the active supporters of the College at that time were Sir John Banks, P.R.S., Sir George Baker, Bart., F.R.S., and John Hunter, Esq., F.R.S., the latter being described as the life and soul of the undertaking.

The Coleman régime saw the founding of the Royal Society for the Prevention of Cruelty to Animals. People were becoming veterinary conscious, and before

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Professor Coleman died the first medical panel of examiners for the College was set up. The death of Coleman in 1840 marked the end of almost half a century of work in charge of the College, which owes a great deal to the steady progressive policy of a man to whom we of a later generation must be grateful.

William Sewell, the chief assistant of Coleman, was appointed Principal in 1841, and in 1844, as the result of a long period of professional dissatisfaction, the Royal College of Veterinary Surgeons was formed and became the examining body of the Royal Veterinary College. It was the logical conclusion of a natural desire among practitioners for more clearly defined standards and a more assured status for the veterinary profession.

The College was still growing, and the advent of Charles Spooner as Principal, upon the death of Sewell in 1850, marked the beginnings of a period in which additional buildings were embarked upon. This was about 1860. The surroundings of the College were changing. London was creeping out. The coaches were giving place to that new and noisy invention of Robert Stephenson's. Railway lines began to run across the meadows. The whole district was becoming urbanised. It was a time of change and development, both within and without. Soon after the appointment as Principal of James Beart Simonds, the diseases of cattle were included in the work of the College, which had hitherto dealt only with horses. It was in this period, during the year 1875, that the College received its first Charter of Incorporation, which was granted to the Royal Veterinary College by Her Majesty Queen Victoria. That was followed by still further development. New buildings and a new lecture theatre with laboratories were completed some four years later and opened by His Royal Highness the Duke of Cambridge.

The year 1892 marked another landmark in the history of the College with the appointment to the staff of the College of Sir John McFadyean, who subsequently became Principal in 1894. He came as a keen and enthusiastic disciple of Pasteur and Koch. He it was who applied so much of the work of those great scientists to the enlightenment and development of veterinary science. His researches into tuberculosis, glanders and Jöhne's disease were accepted as basic and became standard work in veterinary science. He was a man of rare skill and great attainment and brought the College academically and practically to a point at which it proved to be of great and inestimable service to the nation during the Great War.

That time of national trial proved epoch-making to the Royal Veterinary College, as it did to so many other great institutions. Whilst bringing out the best in many ways, it also exposed weaknesses, started new policies. During the Great War the Royal Veterinary College carried on training veterinary officers for the British Army and the Dominions' forces, and officers from both made use of the College to take the Diploma of M.R.C.V.S.

The end of the Great War saw the emergence of the Royal Veterinary College

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with a higher academic standing than it had ever had before and with a great record, of which the College may be justifiably proud, of service in the training of men for the purposes of the nation and of the Empire. But it emerged also with sadly depleted resources. The generosity of the relatively few people who were interested in veterinary science was well nigh exhausted. There were no endowments, no funds. The buildings were in the last stages of dilapidation and decay. The staff was too small, and gravely underpaid, and its members had made great sacrifices for the continuance of a work which they all had deeply at heart.

Academic progress must inevitably depend upon material considerations, and no money meant no work, but—and this proved the greatest tribute to all the work of the past—the demand for the trained men which the College produced was greater than ever it had been before. Calls came from home and from abroad. The Colonies needed veterinary men in increasing numbers. Some industries—dairying and agriculture—were demanding efficient veterinarians, but there was no money with which to train them. It aroused the conscience of the nation. A Departmental Committee of the Colonial Office investigated the conditions which obtained, and this was followed by another investigation by a Departmental Committee of the Ministry of Agriculture and Fisheries. This body made constructive proposals that would enable the College to fulfil the urgent needs of authorities at home and overseas. The Government of the day gave practical effect to the proposals. So began a new chapter in the history of a tried institution that had proved its value to the Empire through work that had been carried out under incredibly difficult conditions.

The Reconstitution and Rebuilding

The Departmental Committee set up by the Minister of Agriculture and Fisheries in 1928 brought to public attention the deplorable financial and physical condition to which the College had fallen in the post-war years. The Committee considered and reported on the reconstruction of the Royal Veterinary College, and its findings form a very convenient starting-point from which to trace the progress that has culminated in the opening of the new building by His Majesty the King.

The Committee found the College in a state of dilapidation, and referred to the conditions under which the work was being carried on as a national disgrace. Financially prospective income was insufficient to cover essential expenditure, and the resources of the College were depleted and its staff underpaid. The Committee's recommendations were published in full in a report dated August 8th, 1929. They fell under the following five main headings:

(1) That the College should be rebuilt on the Camden Town site, the freehold of the site being, if possible, acquired from the Ecclesiastical Commissioners.

(2) That the College should, when conditions permitted, secure recognition as a school of the University of London. This, it was noted, necessitated amongst

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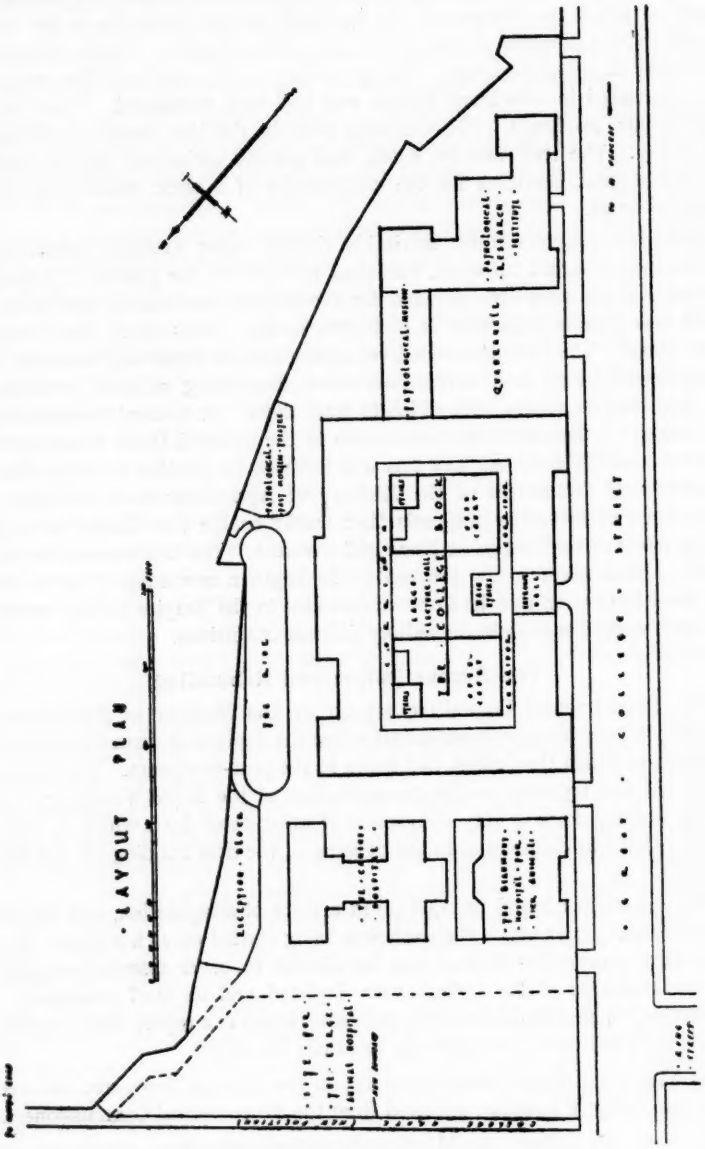
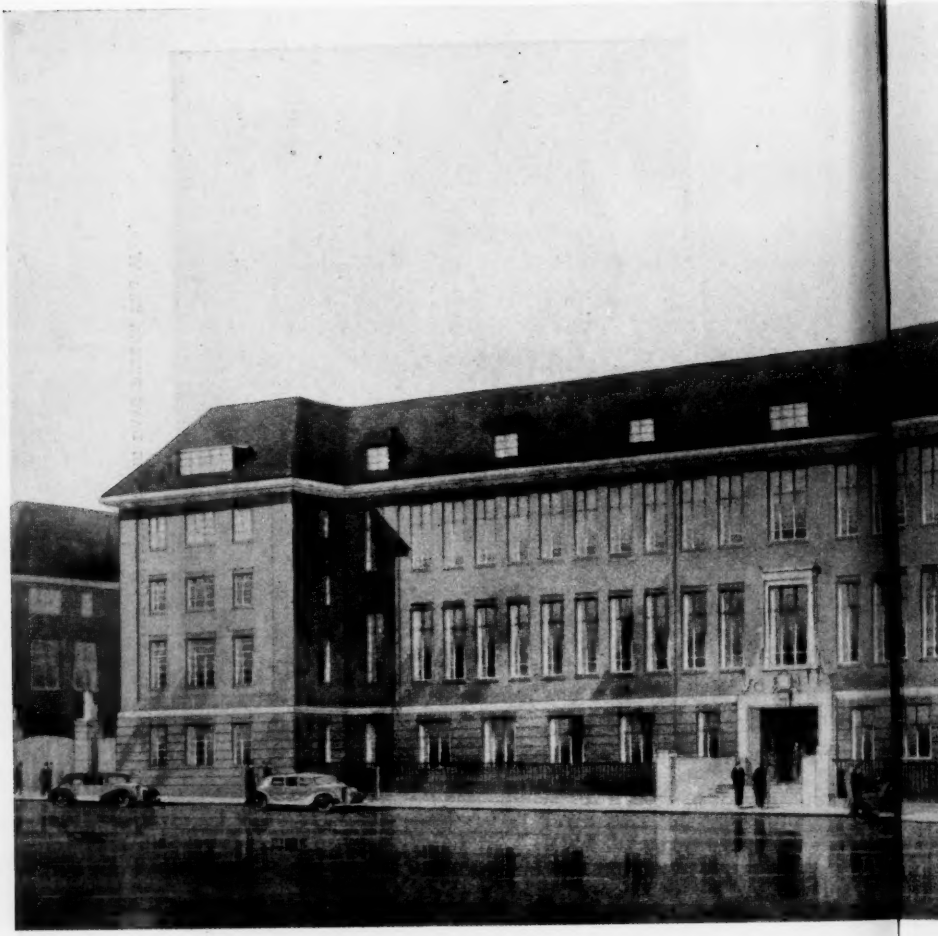

LAYOUT PLAN
COLLEGE
BLOCK

THE ROYAL VETERINARY COLLEGE IN THE DAYS BEFORE THE WAR.



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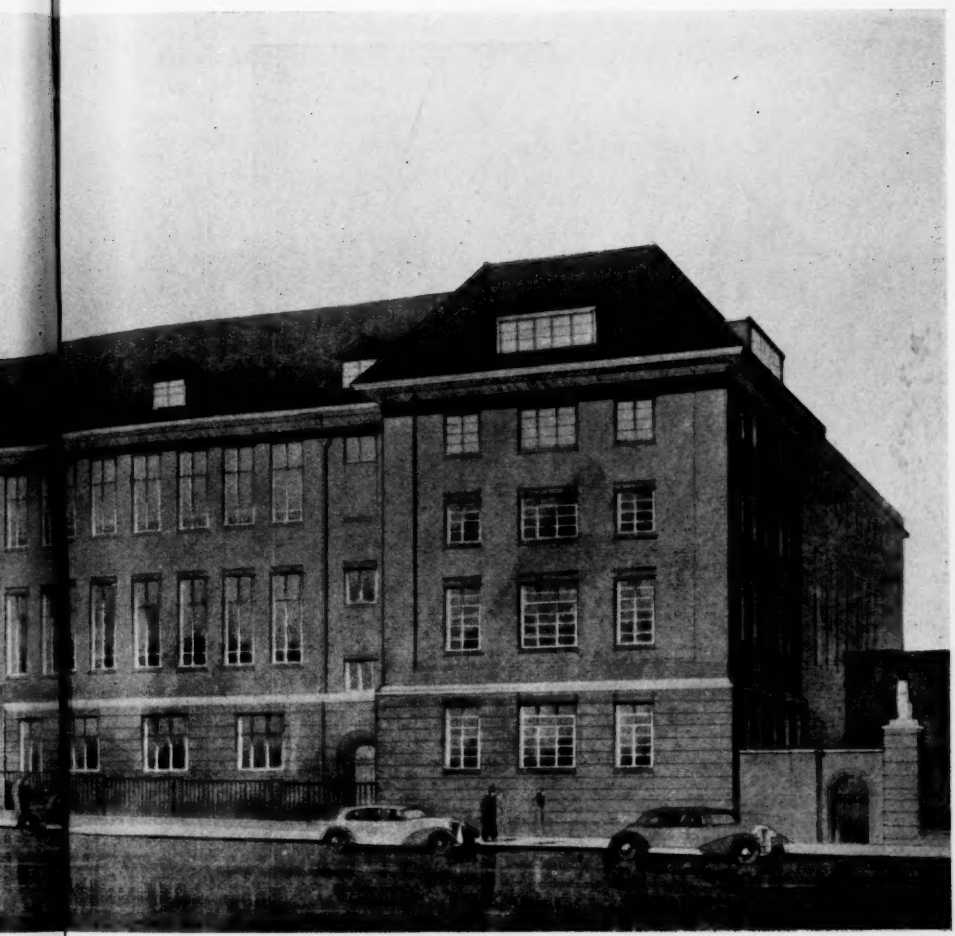

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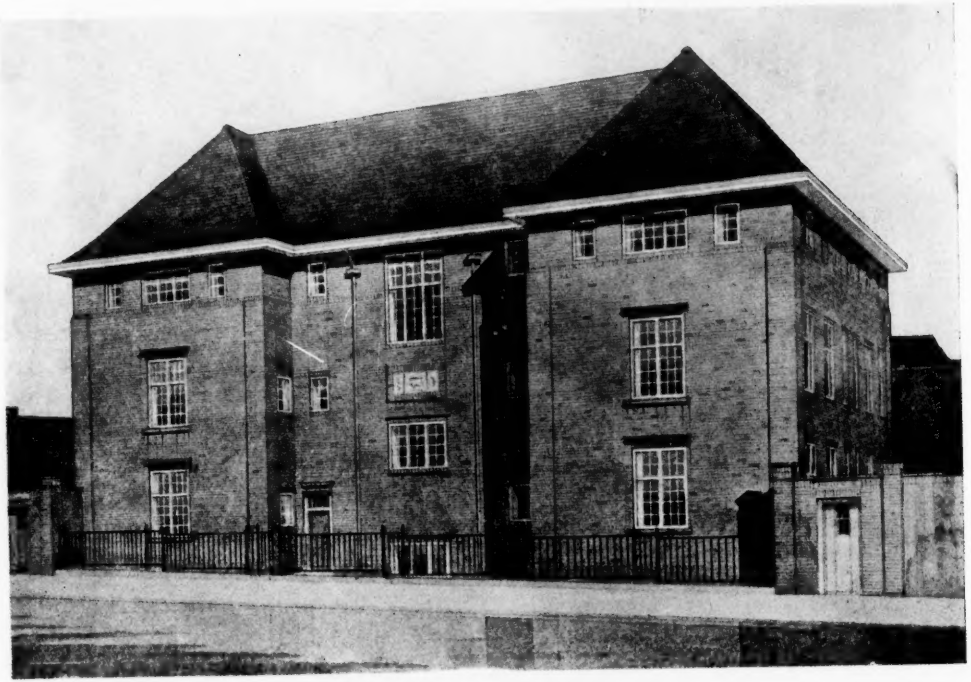

THE BEAUMONT ANIMALS' HOSPITAL.

(The first block to be completed.)

other conditions that the College should be on a sound financial basis and that its teaching staff should be paid at University standards.

(3) That the College should be re-organised internally into nine teaching departments, staffed in a manner adequate to provide proper training to meet the needs of veterinary science in this country and allow of generous facilities for research. Thus, in addition to its ordinary work, the College would be enabled to meet any likely demands for post-graduate courses in this country and the needs of the Colonial Empire.

(4) That the Government of the College should be reconstituted under a new Charter.

(5) That more effective co-operation should be established between the College and the Research Institute, and that the Ministry's grant to the latter should be increased and that it should be provided with a field station.

The cost of re-building, inclusive of the purchase of the freehold and of equipment, was estimated at approximately £300,000. The extra cost of staffing, maintenance and research work in the new departments was estimated at £25,500 per annum.

In summing up its conclusions, the Committee stated: "We realise that these are relatively large figures, but we have before us three main considerations. First, the Royal Veterinary College, which is the oldest and most widely-known institution for veterinary education and research in the Empire, has been carrying out its work under conditions which are discreditable to a civilised community, and is now in imminent danger of closing down for lack of funds. We cannot think it right that there should be such an end to the labours of nearly a century and a-half—labours, moreover, of which the continuance is imperatively demanded by the national interest. Secondly, it is useless to contemplate half-measures; if the reconstruction of the College is to be undertaken at all, it must be undertaken thoroughly. Thirdly, in its main outlines, such a reconstruction must be designed to meet the requirements not of a few years, but of the next half-century: it is neither right nor possible to expect that the effort now required can be soon repeated."

This report was accepted in principle by the Government of the day. The splendid new building, which has been erected on the historic site at Camden Town, is the result of Government help in the form of grants and constructive interest, backed by the self-sacrificing efforts of a loyal and enthusiastic staff, together with the generosity and goodwill of scientific and veterinary people who have worked in a practical way to assure and promote the best interests of the College.

In 1930, representations to His Majesty's Government resulted in an offer to provide £150,000 for the re-building of the College if a further £100,000 could be found by the Governors from other sources. The relatively small number of people interested in the College had made such great sacrifices for the

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continuance of the work in the trying years that had gone before, that the raising of so large a sum seemed to be extraordinarily difficult.

The Principal of the College, Sir Frederick Hobday, came to the rescue, and it was through his untiring efforts that the task was successfully accomplished.

The whole of the site, including the area to the north, which has not yet been built upon, was purchased from the Ecclesiastical Commissioners at a cost of £24,000. The old College has been completely demolished. The outlying portions of the new College, consisting of the Beaumont Hospital, the Canine and Animal Husbandry Blocks, the Pathological Museum Wing connecting the Research Institute with the new main block, the Reception Block, Ride and Post-mortem Block were completed first.

The Beaumont Animals' Hospital for the treatment of the animals of the poor was the outcome of a legacy of £25,000 that was awarded by a Judge in Chancery from the estate of the late Mrs. Grove-Grady. This award was made as being the best way of using the money to effect the testatrix's purpose. It enabled a larger and more adequate hospital to be built, as no provision would have to be made for staff, that being provided freely by the Royal Veterinary College personnel. In this way the efficiency of the College was increased and its traditions maintained of treating animals belonging to people who, through lack of funds, might have to part with old and valued friends.

The Main College Block, in which the historic opening ceremony to-day takes place, was finally carried out to the plans of Major H. P. G. Maule, the architect, who was asked to prepare them by the Governors of the College.

The total cost of the land and of these buildings is approximately £295,000. The ultimate completion of the College by building the Large Animals' Hospital upon the area to the north is the goal of our future work. It will set the seal upon the usefulness and the efficiency of the Royal Veterinary College. When that day comes—and every effort must be made to make it come very soon—it will fittingly crown the great and self-sacrificing efforts that have been made by all who have the well-being of the College at heart. It will be the justification of the Government aid which has brought into being a training establishment for veterinary medicine and surgery that will have a profound effect upon the agricultural and dairying interests of this country and our dependencies beyond the seas. The completion of the College is something that will ever be in the minds of those who serve it.

Whilst the splendid building of which we are so proud has grown, much other work has been done to give effect to the report of the Committee which commenced the new lease of life and usefulness of the College. A new Charter of Incorporation, based upon the recommendations of the Committee, was drafted and finally adopted by the Governors of the College in March, 1936. It was granted on November 16th, 1936, by His Majesty King Edward VIII, under the College's new title of "The Royal Veterinary College and Hospital."

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Power has been taken under the new Charter to seek admission for the College as a School or Faculty of the University of London. The salaries of the staff have been brought to the usual level of University personnel. An Academic Board has been established. The new buildings allow for the installation of proper equipment and facilities for research. Both the status of the College and the social and mental well-being of its students will be well served by admission to London University.

It was originally proposed by the Departmental Committee that the work of the College should be organised under nine departments. At a meeting between the Governors of the College and the Agricultural Research Council, some four years ago, it was decided, after grave discussion, that the work of the College could be better and more efficiently organised on the basis of six large departments rather than nine smaller ones. The staff necessary to work these departments was decided upon at the same time, and the Governors have, as far as funds permit, been working within the framework that has been so set up.

The staff arranged under the Principal and Dean, is as follows :

Department 1. *Surgery and Obstetrics.*—A Professor, a Senior Assistant in Surgery, a Senior Assistant in Obstetrics and two Lecturers.

Department 2.—*Medicine, Materia Medica and Therapeutics.*—A Professor, a Senior Assistant in Preventive Medicine, a Senior Assistant in General Medicine and three Lecturers.

Department 3. *Animal Husbandry.*—A Professor, A Senior Assistant and a Lecturer.

Department 4. *Physiology and Chemistry.*—A Professor (physiology), a Senior Assistant in Biochemistry, a Senior Assistant in Pharmacology, a Lecturer in Chemistry and three Demonstrators.

Department 5. *Anatomy, Histology, Biology and Embryology.*—A Professor, a Senior Assistant in Histology, a Lecturer in Biology and two Demonstrators.

Department 6. *Pathology.*—A Professor in charge of the department who is also Director of the Research Institute in Animal Pathology. The Department is grouped in the following divisions :

Division of Pathology.—A Senior Assistant, a Lecturer and a Demonstrator.

Division of Bacteriology.—A Senior Assistant in Bacteriology, a Senior Assistant in Biochemistry, a Lecturer and a Demonstrator.

Division of Parasitology.—A Senior Assistant, a Lecturer and a Demonstrator.

The Governors have also provided a Superannuated Administrative Staff consisting of a Bursar and Secretary, a Librarian and a Cashier, together with the necessary clerical and maintenance staff.

More effective co-operation has further been established as suggested by the Departmental Committee between the Research Institute and the College.

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This has been attained by combining the work of the Department of Pathology with the work of the Institute. The staff of the Institute are also the staff of the Pathological Department, and the cost of their salaries is shared between the two institutions.

At the moment the maintenance grant of the Institute has not been increased beyond the £5,000 previously paid, nor has the much desired field station, that will add so much to the usefulness of the organisation, been provided.

That gives a brief but comprehensive survey of the organisation which is designed to carry on the work of the Royal Veterinary College with the 350 students who make the full complement of the splendid building. The Architect has ably and cleverly made the very fullest use of the site in the planning of a College that will assist, with the maximum degree of efficiency, the many details of its purpose.

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General Articles

BOVINE TUBERCULOSIS IN HEREFORDSHIRE.

By A. J. WILSDON, Ph.D., B.Sc., M.R.C.V.S.

County Veterinary Officer, Hereford.

ALTHOUGH Herefordshire is concerned with many branches of agriculture, its fame rests primarily on its beef breed of cattle. To-day, Herefords are found in great numbers in every country in which beef production is regarded as of importance. They have successfully adapted themselves to widely varying conditions of soil and climate, and the extent to which they combine capacity for beef production with hardiness is a tribute to the skill and good management of generations of breeders, most of whom have farmed within the county.

The colour and markings of Hereford cattle give a characteristic appearance of uniformity to the herds. The body colour is a rich deep-red, while the head, crest, brisket and parts of the under-body are white. The accompanying photograph of a typical Hereford bull (Fig. 1) should be sufficient to enable anyone to recognise the breed or its crosses, since the white face is a dominant character in all matings with cattle of other breeds.

Macdonald and Sinclair (1909) have dealt in a comprehensive manner with the history of Hereford cattle, but the exact origin of the breed is apparently a subject of considerable speculation and controversy. Several agricultural historians mention the breed in various works published in the eighteenth century, but their theories are so conflicting as to be of little value in arriving at a correct conclusion as to the origin of these cattle.

As might be expected, Hereford cattle were, until recent times, kept in most areas in the county almost to the complete exclusion of any other. The sale of store cattle was regarded as a very important source of income by most farmers, and the system of farming in vogue was designed to cater for their needs to the fullest possible extent. Now, although the Hereford breed is still predominant in the county, it can no longer be said that Herefordshire farmers are concerned exclusively with the production of beef. The long and severe depression in the prices of store and beef cattle have compelled many to seek salvation in milk production, and so at the present time dairy cattle are to be found in considerable numbers in the county, with a corresponding change in the system of farming.

Nevertheless, a short description of the conditions under which cattle have been kept in Herefordshire in the past—and in the majority of cases are still being kept—will serve to throw some light on the incidence of tuberculosis in the county to-day.

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The county covers an area which is mainly under grass (*see* Table I), most of which is reasonably good in quality.

It is only in the south of the county and in small areas near its centre that the growing of arable crops for sale may be regarded as of primary importance. Elsewhere the area of land under intensive cultivation (fruit and hops) or under ordinary arable crops is comparatively small. Such arable areas as exist are largely cropped with an eye to the provision of winter maintenance of stock, especially cattle. An important point to stress is that until milk production was practised by so many farmers, the herds of the county were nearly all self-contained. Farmers reared all their calves, and purchases were confined to additional very

TABLE I.

ACREAGE UNDER CROPS AND GRASS AS RETURNED ON JUNE 4TH, 1935. ABSTRACTED FROM "AGRICULTURAL STATISTICS," 1935, Vol. LXX, Part 1, page 60.

	Acres.
Total area (excluding water)	536,071
Total acreage under crops and grass	435,235
Arable land	122,290
Permanent grass for hay	92,679
Permanent grass not for hay	220,266
Rough grazings	29,991

young calves for rearing, and to an occasional stock bull. Apart from calves, purchases from outside the county were rare. The recruitment of the herds was brought about by the introduction of home-bred heifers. The cattle were, in fact, managed in a manner which gave very little opportunity for the introduction of disease. From information which is now available as to the freedom from tuberculosis of the native cattle, it cannot be doubted that Herefordshire must have been almost completely free from this disease until milk production became established in the county. So long as the county depended on the production of store cattle and their export to other areas to be fattened, and so long as the system of farming did not entail the importing of cattle from outside, its record in the matter of tuberculosis was enviable.

Another important point to note is the manner in which the native cattle are kept in Herefordshire and the part played by management in their healthy condition and freedom from many diseases. The cattle spend as much time as possible in the fields, and nature has provided them with very thick hides which allows them to live and thrive out of doors in almost all kinds of weather. Even the open yards to which they are confined during a part of the time in winter are often very exposed. The cattle are expected to thrive without any kind of molly-coddling. It is rightly thought that if reasonable treatment in the matter of feeding is provided, there is every reason to expect them to make good progress. The maintenance of self-contained herds, together with a system of management which permits the maximum access to open air, were important factors in keeping the stock free from tuberculosis.

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The increase in milk production in the county in recent years has undoubtedly brought about a situation which, from the disease point of view, is not so satisfactory. Before the Great War dairy farming in Herefordshire was negligible. The production of milk for sale in the liquid form was, in the main, confined to a few farmers around Hereford and other towns in the county. A certain amount of farm butter-making was carried on in spring and summer by a number of farmers and smallholders in various parts of the county, this being combined with calf rearing. This did not, however, disturb the principle of maintaining self-contained herds. During the War, milk production increased temporarily, the Government encouragement of cheese-making being responsible for this development. Soon after the end of the War the cheese factories in the county ceased to operate, and milk production greatly diminished. There soon followed, however, the severe and prolonged slump in the prices of store and fat cattle. Many small and medium-sized farmers, and some of the bigger ones, were forced to turn their attention to milk production. An outlet was found for increasing quantities of milk, particularly in Birmingham and the surrounding area, and for manufacture into chocolate. Farm buildings were adapted for dairying purposes, and the system of farming was modified to conform to this departure. Rearing was no longer practised to an extent sufficient to replace wastages in the herds. Regular purchases of dairy cows were made from sources outside the county, and so the traditional and effective system of maintaining self-contained herds was thrown overboard. It is interesting, however, to note that a few individuals, while taking up milk production, did not otherwise depart from the system of farming which they formerly practised. They continued to rear calves and maintain their herds on a self-contained basis. It is significant that by so doing they have kept their herds just as free from disease as any of the beef herds in the county.

The change over to milk production has not been equally spread over the whole of the county. The eastern half of the county is nearer Birmingham and the industrial area surrounding it, and it is here that milk production has established itself to the greatest extent. Up to the present the milk produced in the western half of the county does not amount to very much, but the recent erection of a factory near Leominster may influence more farmers in the north and north-west to interest themselves in the production of milk.

The Incidence of Tuberculosis amongst Beef Cattle in Herefordshire.

After giving the problem of tuberculosis in the county every consideration, the Hereford County Diseases of Animals Committee authorised the tuberculin testing of a number of the beef cattle in the county. Although it was the general opinion that the incidence of tuberculosis amongst the beef cattle was considerably less than amongst the dairy cattle, it was recognised that no authentic figures were available, and it was therefore considered advisable to put the matter to the test. A letter was accordingly addressed to forty representative producers of beef cattle in all parts of the county, these being selected at random. Only

fifteen agreed to have their herds tuberculin tested. In many cases the communication was ignored, this being an indication of the indifference with which producers of beef cattle regard tuberculin testing. The majority of those who keep beef cattle have .had no experience of tuberculosis, and even the offer of free tuberculin testing is not sufficient to induce them to allow their herds to be subjected to the test. Although the number of herds included in the survey test was not as many as would seem desirable, yet they were situated in all parts of the county and were sufficiently representative to give a fair picture of the incidence of tuberculosis amongst the beef cattle of the county. It has been considered inadvisable to publish the results in relation to the districts, since these figures are of a confidential nature, but at a later stage in the paper it is proposed to refer individually to areas in the county, when the experience obtained in the testing of both beef and dairy cattle will be discussed.

The results of the tuberculin testing of the fifteen herds of beef cattle are given in Table II. The double intradermal test was employed, Cambridge Synthetic Tuberculin being used.

Discussion on the Results Obtained with Beef Cattle (Table II.)

It will be seen that the majority of the herds are self-contained, and that, except in two, tuberculosis can be said to be non-existent. The complete eradication of the disease is therefore a practicable proposition involving very little expenditure of money for the slaughter of reacting cattle. A figure as low as 2.79 per cent. of reactors among the total stock of 1,216 head of cattle, and 5.7 per cent. among 473 cows, compares very favourably with any figures yet published on the incidence of tuberculosis amongst cattle in Great Britain. The owner of herd No. 15 has only recently started farming, and he bought a number of reacting cows from other herds. The owner of herd No. 14 unfortunately purchased a dairy shorthorn cow which turned out to be an open case of tuberculosis (chronic cough) and all the animals housed in direct or indirect contact with this cow subsequently reacted to the test.

Montgomerie and Rowlands (1936) have commented on the relative freedom of the herds in North Wales from tuberculosis when the housing conditions under which the cattle live are kept in mind, and in a paper read to the Royal Sanitary Institute, Montgomerie (1936) stated that good housing conditions are not necessary for herd freedom from tuberculosis. Although it is true that many of the cleanest herds in Herefordshire are on farms which have very primitive buildings, yet the importance of good housing should not be overlooked in formulating measures for the eradication of tuberculosis. When old buildings with wooden mangers and troughs become infected from the presence of an open case of tuberculosis, the subsequent incidence of the disease in a formerly clean herd can reach very high figures. It would be a mistake to allow the farming community to think that buildings are of little importance in keeping a herd free from tuberculosis. In this connection, Jordan (1933) found that by far the most frequent source of infection was contaminated premises and pastures, but Maddock (1936) showed

FIG 1.—The present-day Hereford.
(Reproduced by kind permission of the Hereford Herd Book Society.)

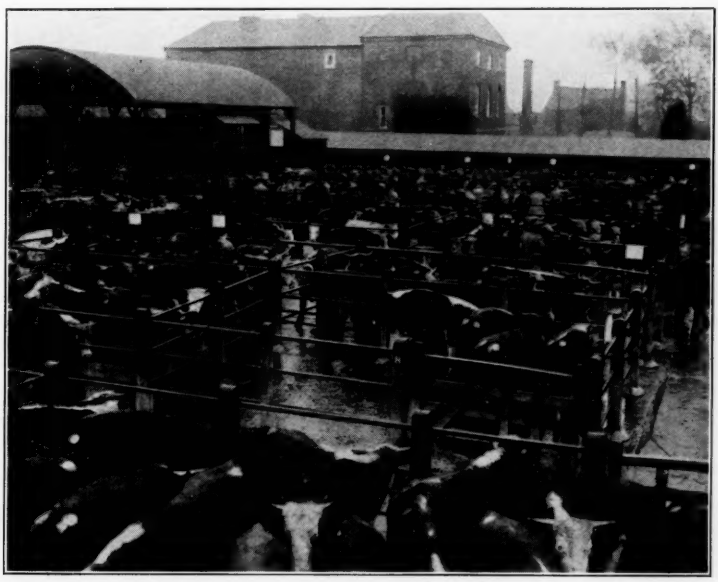

FIG. 2.—A portion of the Leominster Cattle Market.
(Reproduced by kind permission of the "Hereford Times," Ltd.)

(*Article by* A. J. Wilsdon, Ph.D., B.Sc., M.R.C.V.S., *page* 403)

TABLE II.

THE NUMBER OF CATTLE TUBERCULIN-TESTED AND NUMBER OF REACTORS IN HERDS MAINLY KEPT FOR BEEF PURPOSES (HEREFORD CATTLE)

Farm	Cows		Heifers		Bullocks		Bulls		Calves		Totals		Reactors per cent.	Remarks
	T	R	T	R	T	R	T	R	T	R	T	R		
1	21	—	18	—	2	—	1	—	9	—	51	—	0	A number of store stock are occasionally bought. Self-contained.
2	41	—	34	—	15	—	6	—	49	—	145	—	0	Self-contained except for the purchase of store bullocks, mostly Hereford cross.
3	31	—	20	—	8	—	8	—	17	—	84	—	0	Self-contained.
4	41	—	26	—	—	—	6	—	21	—	94	—	0	Self-contained.
5	31	—	19	—	8	—	6	—	—	—	64	—	0	Self-contained.
6	16	—	18	—	—	—	2	—	16	—	52	—	0	Self-contained.
7	18	—	5	—	2	—	1	—	17	—	43	—	0	Half the herd Hereford and the remainder Ayrshire cattle. Practically self-contained.
8	48	—	16	—	2	—	5	—	29	—	100	—	0	Self-contained.
9	47	2	32	—	—	—	14	—	26	—	119	2	1.6	Self-contained.
10	40	3	18	—	2	—	2	—	28	—	90	3	3.3	Hereford herd. Self-contained, but a few cows purchased in the market for rearing store cattle
11	20	1	14	1	9	—	4	—	12	—	59	2	3.4	Self-contained except for the purchase of a few Irish cows. Reactors traceable to infection from one of these cows.
12	35	2	36	1	2	—	3	—	38	1	114	4	3.5	Self-contained except for occasional purchase of store stock.
13	11	1	—	—	—	—	2	—	8	—	21	1	4.76	Number of store cattle bought in Abergavenny market and Hereford cross calves bought in Hereford market.
14	45	12	41	2	—	—	4	—	40	1	130	15	11.5	About eight years ago a Shorthorn cow was purchased which was an open case of tuberculosis. All the animals housed in direct or indirect contact with this animal during the winter months reacted to the test. This accounts for the high incidence of the disease on this farm.
15	28	6	8	1	—	—	5	—	9	—	50	7	14	Herd was founded by the purchase of cheap stock at dispersal sales and known reactors. Now self-contained.
Totals	473	27	305	5	50	0	69	0	319	2	1216	34		
Reactors per cent.	5.7		1.6		0		0		0.6		2.79			

Abbreviations: T = Tested. R = Reactors to the tuberculin test.

that the danger of infection from pastures previously naturally infected is slight, and the danger from pastures manured with ordinary farmyard manure still more remote. It appears, therefore, that infected premises are a very important factor in the spread of tuberculosis, and that cattle which are kept out of doors all or most of the time run much less risk of contracting infection. This is borne out by the fact that tuberculosis amongst sheep is rare, yet sheep are grazed in considerable numbers together with infected cattle and, further, although the disease appears to have gained entry into some of the Hereford beef cattle, it has not gained any considerable hold on the herds owing to the method of management, *i.e.*, the animals are kept out of doors all or most of the time.

The Incidence of Tuberculosis amongst the Dairy Cattle in Herefordshire.

When the tuberculin testing of herds was handed over to the County Council under the Milk (Special Designations) Order, 1936, the opportunity arose of obtaining some details of the incidence of tuberculosis amongst the dairy cattle of the county. It was known from the inspections carried out under the Milk and Dairies Order, 1926, that certain areas of the county had a relatively high incidence of tuberculosis among dairy cattle. The results of the tuberculin testing of dairy herds are set out in Table III, together with observations on the individual herds.

Discussion on the Results given in Table No. III.

The results recorded were nearly all obtained in the course of work carried out under the Milk (Special Designations) Order, 1936, and in consequence they refer only to animals over six months of age. The majority of the herds, which are situated in every district in the county and are a fair representation of the dairy cattle in the county, including some of the old-established milking herds, had never been subjected to a previous tuberculin test.

One-quarter of the herds showed an incidence of tuberculosis under 5 per cent., one-half of the herds no higher than 15 per cent., and three-quarters of the herds less than 30 per cent., whilst the remainder showed an incidence of tuberculosis from 30 per cent. to over 80 per cent.

When the results were summarised it was found that 23.66 per cent. of the 1,737 head of cattle and 28.75 per cent. of the 1,127 cows tested were infected. The dairy herds showed, therefore, a far heavier infection than the beef herds. If, however, the results are analysed it will be seen that tuberculosis could be eradicated from half of these herds without any considerable expense in slaughtering reactors. However, the eradication of the disease in the various areas will be dealt with later.

The self-contained herds are generally the cleanest herds. This conclusion is in keeping with that of other workers. Some self-contained herds have, however, a very high incidence of disease, and in such cases the buildings and conditions of farming have played a considerable part in bringing this about. Many Here-

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fordshire farm premises which have been converted for dairying purposes are far from being ideal. The yards are situated in hollows, and the system of keeping cattle in the fold-yards to make manure has tended to create a very unsatisfactory state of affairs. The mangers and troughs are, in many cases, wooden, and the great desire to keep milk yields up by high temperatures in the sheds has resulted in a considerable spread of tuberculosis amongst many of the self-contained herds.

Even Herefordshire farmers who have gone over to milk production do not as yet appreciate sufficiently that open air is just as important for their dairy cattle as it used to be for the beef cattle which they once kept. The incidence of tuberculosis in many of the dairy herds of the county could be reduced if their owners gave the cows more access to the open air, especially since it has not yet been possible to evolve an ideal system of housing. This suggestion is impracticable in many areas of Great Britain owing to the small proportion of suitable land available on some of the farms and to the wet and/or cold conditions which prevail during the winter months in certain districts. In Herefordshire, however, the possibility definitely exists of combating the spread of infection by avoiding the practice of housing the cattle too much. The hygienist, in his desire to produce clean milk, lays emphasis on the importance of dung channels, drainage, and space behind the cows, but too often forgets that the cow is infected by disease through the nose and mouth. Farmers should, too, be taught the importance of daily washing the feeding troughs with washing soda, as well as the floors of the cowshed.

It has been observed that the oldest established dairymen in Herefordshire have the most heavily infected herds. The longer they have been dairy farming, the greater appears to be the incidence of tuberculosis amongst their cattle. The majority of the heavily-infected herds are situated near the towns and in the eastern half of the county, where milk production has been practised for the longest period of time. Many of the purchased cows which have been brought into Herefordshire have come from Gloucestershire and Worcestershire ; in both counties dairy farming has been practised for a longer period, and the incidence of tuberculosis is consequently higher.

In considering this question of purchased cows from outside Herefordshire, the position arising from the introduction of occasional Ayrshire cows must also be noted. Many of these Ayrshire cows have been tuberculin tested in the course of routine inspections in the county, and invariably they have been proved to be reactors. The tests have been conducted so soon after their arrival that there has been no time for them to become infected in the county. It must be assumed that many of the Ayrshires finding their way south from Scotland are reactors. Farmers should be warned that although Ayrshire breeders have made such a marked advance in freeing their herds from tuberculosis, the progress made has meant that a number of reactors have had to be eliminated, and these have had to be marketed outside the accepted Ayrshire country. It is only

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TABLE III.

THE NUMBER OF ANIMALS TUBERCULIN-TESTED AND NUMBER OF REACTORS IN HERDS MAINLY KEPT FOR DAIRY PURPOSES (ALL BREEDS).

Farms	Cows T	Cows R	Heifers T	Heifers R	Bullocks T	Bullocks R	Bulls T	Bulls R	Calves T	Calves R	Total T	Total R	Reactors per cent.	Remarks.
1	16	—	11	—	2	—	1	—	—	—	30	—	0	Cows purchased in Herefordshire markets and farms to commence herd. Now self-contained.
2	14	—	27	—	—	—	—	—	9	—	50	—	0	Cows purchased in Herefordshire markets and farms to commence herd. Now self-contained.
3	36	—	—	—	—	—	1	—	—	—	37	—	0	Self-contained.
4	9	—	—	—	—	—	—	—	—	—	9	—	0	Cows purchased in Herefordshire markets and farms. Flying.
5	17	—	—	—	—	—	1	—	—	—	18	—	0	Tested stock purchased. Now self-contained.
6	12	—	2	—	—	—	1	—	—	—	15	—	0	Occasional cow purchased from neighbouring farmers.
7	23	—	12	—	—	—	1	—	—	—	36	—	0	Herd replenished by purchase of eight calves from Cheshire annually.
8	15	—	9	—	—	—	1	—	4	—	29	—	0	An Ayrshire herd run along with a pedigree Hereford herd. (*See* No. 7 in Table II). Practically self-contained.
9	57	2	18	—	—	—	2	—	—	—	77	2	2.6	Self-contained.
10	20	—	11	1	3	—	1	—	—	—	35	1	2.86	The reactor was purchased in Hereford market. Self-contained.
11	27	1	—	—	—	—	—	—	—	—	27	1	3.7	Cows purchased in Herefordshire markets and farms. Flying.
12	17	—	8	1	—	—	1	—	—	—	26	1	3.8	Heifers purchased from Carmarthen and Ireland. Beef production also carried out. Flying.
13	38	1	25	1	—	—	1	—	5	1	69	3	4.3	Self-contained.
14	15	1	1	—	—	—	1	—	—	—	17	1	5.9	Cows purchased in Herefordshire markets and farms. Now self-contained.
15	25	3	18	—	3	—	1	—	—	—	47	3	6.4	Cows purchased in Herefordshire and Radnorshire farms. Now self-contained.
16	10	1	5	—	—	—	—	—	—	—	15	1	6.6	Cows purchased in Herefordshire markets and farms. Now self-contained.
17	14	1	34	3	—	—	1	—	—	—	49	4	8.16	Rearing farm. Some cows purchased, but sells heifers as they calve down.
18	10	1	—	—	—	—	—	—	—	—	10	1	10.0	Self-contained.
19	28	4	20	1	—	—	1	—	—	—	49	5	10.2	Cows purchased in Herefordshire markets and farms. Now self-contained.
20	18	3	10	—	—	—	—	—	—	—	28	3	10.7	Beef production also carried out. Self-contained.
21	24	5	60	6	—	—	1	—	—	—	85	11	12.9	Some purchases made in Gloucestershire prior to testing. Now self-contained rearing herd.
22	21	4	9	—	—	—	1	—	—	—	31	4	12.9	Cows purchased in Herefordshire markets and farms. Now self-contained.
23	21	4	15	1	—	—	1	—	—	—	37	5	13.5	Herd replenished by purchase of Irish heifers.
24	33	5	7	1	—	—	2	—	—	—	42	6	14.29	Cows purchased in Herefordshire markets. Flying.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	10	2	—	—	—	—	1	—	—	—	11	2	18.1	Cows purchased from dealers in Midlands. Flying.
28	15	3	—	—	—	—	—	—	—	—	15	3	20.0	Cows purchased in Herefordshire markets. Flying.

23	21	4	15	1	—	—	1	—	—	—	37	5	13.5 Herd replenished by purchase of Irish heifers.
24	33	5	7	1	—	—	2	—	—	—	42	6	14.29 Cows purchased in Herefordshire markets. Flying.
[illegible]													Heifers purchased from Ireland. Flying.
[illegible]													17.65 Self-contained.
27	10	2	—	—	—	—	1	—	—	—	11	2	18.1 Cows purchased from dealers in Midlands. Flying.
28	15	3	—	—	—	—	—	—	—	—	15	3	20.0 Cows purchased in Herefordshire markets. Flying.
29	30	6	—	—	—	—	2	1	—	—	32	7	21.88 Cows purchased in Herefordshire markets and farms. Now practically self-contained.
30	15	6	12	—	—	—	—	—	—	—	27	6	22.2 Reacting cows purchased in Worcestershire markets.
31	16	4	2	—	—	—	—	—	—	—	18	4	22.2 Cows purchased in Herefordshire markets. Flying.
32	12	3	—	—	—	—	1	—	—	—	13	3	23.0 Self-contained.
33	33	8	—	—	—	—	1	—	—	—	34	8	23.5 Cows purchased in Worcestershire markets. Flying.
34	17	4	3	1	—	—	—	—	—	—	20	5	25.0 Cows purchased from Midland dealer (unseen).
35	24	8	7	—	—	—	—	—	—	—	31	8	25.8 Prior to testing purchased a number of Ayrshire cows from dealer. Now self-contained.
36	17	5	19	5	—	—	1	—	—	—	37	10	27.0 Herd replenished by purchase of Irish heifers.
37	24	6	5	2	—	—	—	—	—	—	29	8	27.6 Cows purchased in Herefordshire markets. Flying.
38	19	12	23	—	—	—	1	—	—	—	43	12	27.9 Dairying for a considerable period. Buildings infected. Self-contained.
39	3	2	18	5	1	—	—	—	—	—	22	7	31.8 Cows and heifers purchased from Norfolk and sale at Reading. Now self-contained.
40	26	11	12	2	—	—	1	1	—	—	39	14	35.9 Cows purchased in Gloucestershire markets. Flying.
41	47	24	35	12	—	—	1	—	15	—	98	36	36.7 Recently founded by purchase of cows in Gloucestershire markets. Now self-contained
42	16	6	9	3	5	5	1	—	—	—	31	14	45.1 Dairying for a number of years. Buildings infected. Self-contained.
43	36	26	19	8	—	—	3	—	—	—	58	34	58.6 Dairying for a number of years. Buildings infected. Self-contained.
44	51	32	9	3	—	—	3	2	—	—	63	37	58.7 Dairying for a number of years. Buildings infected. Self-contained.
45	15	11	1	—	—	—	1	1	2	—	19	12	63.1 Cows purchased in Gloucestershire and Worcestershire markets.
46	21	13	—	—	—	—	1	1	—	—	22	14	63.6 Cows purchased in Gloucestershire markets. Flying.
47	54	42	12	5	—	—	1	—	—	—	67	47	70.1 Dairying for a number of years. Self-contained.
48	11	9	4	3	—	—	—	—	—	—	15	12	80.0 Cows purchased in Worcestershire markets. Dairying for a number of years. Flying.
49	25	21	—	—	—	—	1	—	—	—	26	21	80.77 Conditions bad and buildings badly infected. Flying.
50	21	16	7	7	—	—	1	1	—	—	29	24	82.7 Conditions of farming bad. Dairying for a considerable period. Self-contained.
Totals	1127	324	512	73	14	5	42	7	42	2	1737	411	
Reactors per cent.		28.75		14.25		35.71		16.66		4.76		23.66	

fair to add, however, that there is in the county an Ayrshire herd which has an excellent record in this matter. The foundation of this herd was laid by the purchase of tuberculin-tested stock.

The information which is already available on the subject would appear to indicate that the incidence of bovine tuberculosis in Great Britain bears considerable relationship to the density of human population. In a survey of the country, it will undoubtedly be found that the disease is most prevalent in those areas which have been producing milk for a considerable period. Prior to the advent of motor transport, milk had to be produced as near as possible to the consumer, and the industrial areas in or adjacent to Cheshire, Derbyshire, Lancashire, Shropshire, Staffordshire and Yorkshire (West Riding) have, outside London, the greatest human population. Examination of the cattle slaughtered under the Tuberculosis Order of 1925 during the last ten years shows that these counties have dealt under the Order with about one-third of all the animals slaughtered in the whole of great Britain. (Report of the Proceedings under the Diseases of Animals Acts, 1926 to 1935 inclusive.) The Order only deals with clinical cases of the disease. It will, however, be accepted by all that the result of keeping an animal showing clinical signs of tuberculosis on a farm for any length of time can only be that other animals become infected with the disease. Jordan (1933) found conclusive evidence to support this contention.

It can be accepted, therefore, that the incidence of tuberculosis amongst the cattle population of a county is accurately reflected in the number of animals taken under the Tuberculosis Order. It may be suggested that certain of these counties have adopted more frequent routine inspections than others. Nevertheless, if the cows in Herefordshire were seen daily by a veterinary inspector our numbers would never equal those slaughtered in any of the counties referred to above. Routine inspection in Herefordshire, except on a small proportion of the farms, is relatively of very little value in the control of tuberculosis. The significance of these observations should not be lost sight of in any scheme for the eradication of tuberculosis in Great Britain.

Street (1937), in his book " Farming England," deals with the great varieties of farming practice that exist in England to-day, but irrespective of farming practice, it is proposed to stimulate the eradication of tuberculosis by an additional subsidy for milk from attested herds (milk policy). The result of this policy will be the stimulation of milk production in the rural areas where the farmers have ample land to rear stock. The farmer who has been milk producing for a generation in infected buildings in a populous area where land is expensive has much less hope of ever owning a tubercle-free self-contained herd. What has been accomplished in Ayrshire and Carmarthen would be much more difficult to achieve in the industrial counties of Great Britain. The rearing areas must be encouraged to rear stock, but not to produce milk. Part of the subsidy should be diverted to pay for the rearing of heifers on attested farms, and if the animals

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are ear-punched they would not be eligible for any additional subsidy as beef cattle should they prove to be unsuitable for dairy stock.

The position in Herefordshire is peculiar in that many of those farmers who have gone into milk production still continue to use a Hereford bull to cross with dairy cows. The bull calves obtained from this cross command a much higher price on the local markets for rearing. The heifer calves, are not as a general rule, suitable for recruiting into the dairy herds later on, although in some cases the first cross is an excellent milk producer. The dairy herds must, therefore, be replenished by the introduction of dairy-bred animals, and the safest plan would appear to be that such animals should be brought into the county as calves. If subjected to a test soon after their arrival the risk would be very small.

Farm No. 7 is of special interest, since this farmer has purchased each year eight dairy Shorthorn calves from Cheshire. It is known that the incidence of tuberculosis in that county is high, and he has therefore been fortunate in not purchasing a single tubercular animal. Montgomerie and Rowlands (1936) have drawn attention to the risk entailed in bringing infected calves from dairy districts into clean areas. That this risk exists in a small degree is confirmed by experience amongst dairy herds in Herefordshire. This problem, however, cannot be solved by prohibiting the purchase of calves from dairying districts. The incidence of tuberculosis amongst calves is considerably less than amongst dairy cows, and the risks entailed in introducing them into clean areas must be proportionately lower. There are not sufficient calves produced in Herefordshire to supply the needs of the area, and if the rearing of tubercle-free stock is to be encouraged, a considerable number of calves will have to be permitted entry into attested herds after tuberculin testing and isolation for the prescribed period of two months.

The Incidence of Tuberculosis in the Various Districts.

Details of the incidence of tuberculosis among 15 beef-producing farms containing 1,216 cattle, and 50 dairy farms containing 1,737 cattle, have been given without specific reference to the various districts in the county. In considering the problem of eradication, it is necessary that a few brief notes be made on the various districts. Such a review will indicate the relationship of farming practice to the incidence of the disease.

In Table IV are given the returns collected by the Ministry of Agriculture and Fisheries on June 3rd, 1933, on agricultural holdings exceeding one acre in the County of Hereford. The number of dairy cattle, other cattle, total cattle and total sheep are set out. Details of the stock in Leominster Borough, including the out-parish, have been kept separate from the adjoining rural area, as this district includes in fact an extensive rural area with more stock than any of the other urban areas in the county.

To assist readers, the accompanying map of Herefordshire, with the county boundaries, shows the situation of the various districts.

The definition "dairy cattle" includes all cows in milk, cows in calf and heifers

in calf, but does not necessarily refer to cows kept for the production of milk only. Dairy cattle in Herefordshire include cows rearing calves, cows kept for farm butter production, and cows kept for the production of milk for sale. It is estimated that there are not more than 15,000 cows and heifers in milk and in calf on 800 farms in Herefordshire producing milk for sale for liquid consumption or for manufacturing purposes. The figures already given on the incidence of tuberculosis amongst dairy cattle refer to this type of cow, *i.e.*, a cow in a dairy herd registered with the Milk Marketing Board. The 1933 figures of the stock in the county have been used, as the work of testing was commenced in 1934.

TABLE IV.

THE NUMBER OF DAIRY CATTLE, OTHER CATTLE, TOTAL CATTLE, AND TOTAL SHEEP IN THE DISTRICTS OF HEREFORDSHIRE, OBTAINED FROM THE RETURNS OF THE MINISTER OF AGRICULTURE AND FISHERIES ON JUNE 3RD, 1933, ON AGRICULTURAL HOLDINGS EXCEEDING ONE ACRE.

County District.	Dairy Cattle.	Other Cattle.	Total Cattle.	Total Sheep.
Bromyard Urban and Rural	5,743	9,592	15,335	42,784
Dore and Bredwardine Rural	5,710	11,730	17,440	78,477
Hereford Rural and Hereford City	6,059	11,303	17,362	44,992
Kington Urban and Rural	3,424	7,084	10,508	47,839
Ledbury Urban and Rural	3,999	7,275	11,274	25,101
Leominster Boro' including the Out-Parish ...	813	2,035	2,848	6,670
Leominster and Wigmore Rural...	7,451	13,534	20,985	81,999
Ross Urban and Ross and Whitchurch Rural ...	4,672	8,822	13,494	59,391
Weobley Rural	4,186	8,789	12,975	37,418
Totals	42,057	80,164	122,221	424,671

These figures, however, have altered little since that date, and can well be taken as representative of the County of Hereford.

There are only 110,000 people in Herefordshire, and some 25,000 of these are situated in Hereford City and the closely-adjoining district, the remainder of the county being sparsely populated except for a few small towns. The farms which have been dairying for a considerable period are, in consequence, situated near Hereford and the small towns.

Observations on the various districts will also include a survey of the market facilities in the county. In the area to be suggested by the author as suitable for the eradication of tuberculosis, marketing facilities must of necessity be considered if dislocation of trade is not to result. The operation of Clause 23 of the Agriculture Act, 1937, must take into account the marketing of the livestock in an eradication or attested area, otherwise the farming community would oppose any efforts made. Clause 23 is set out below for information :

" 23. The powers of the Minister under section twenty-two of the Diseases of Animals Act, 1894, shall include power to make orders :

" (*a*) declaring any area as respects which he is satisfied that a substantial majority of the cattle therein are free from any particular disease to be an eradication area for the purposes connected with the control of that disease ;

" (*b*) declaring any area as respects which he is satisfied that any particular disease of cattle is for practical purposes non-existent therein to be an attested area for purposes connected with the control of that disease ; and

" (*c*) prohibiting or regulating the movement of cattle into, out of or within any area which is for the time being an eradication area or an attested area."

There are eight rural and six urban districts in the county of Hereford, and they will be referred to alphabetically in the following description.

Bromyard Urban and Rural District.

This district lies to the north-east of the county and is nearer to Birmingham than any other area. A market for liquid milk is available owing to the large human population within easy distance. Milk production as a consequence has been taken up here more extensively than anywhere else in the county.

There are 5,743 dairy cattle and 9,592 other cattle in this district, the total amounting to 15,335. Many of these cattle have been purchased from markets outside the county and mainly from districts with a high incidence of tuberculosis. The farm buildings in the area are not very suitable for milk production. This, combined with the fact that whole areas are now milk-producing, has placed this district in the unenviable position of being the worst in the county in the matter of tuberculosis amongst its cattle. It is estimated that approximately 60 per cent. of the dairy cattle of the area and about 8 per cent. of the other cattle would be reactors to the tuberculin test, a figure much too high for the eradication of tuberculosis by slaughter and compensation. There are, however, still a number of farms in the area where the incidence of tuberculosis is low, and steps might be taken to keep them free of disease.

The market for the area, situated in Bromyard, is rapidly declining as a market for the sale of stock. There are a few good store cattle sales held each spring and autumn, but the geographical position of Bromyard, midway between Hereford, Worcester, Ledbury and Leominster markets, together with the extensive use of lorry transport, has left the market without much stock.

Dore and Bredwardine Rural District.

This district lies to the south-west of the county, and includes some excellent land and also some of the poorest and most inaccessible land in the county. Nowhere in this district has milk production been taken up to any great extent. On the lowland farms store cattle are still being produced in large numbers, and in certain areas (such as the Golden Valley) there is a good deal of summer

fattening on the pastures and winter fattening in the yards. To the south-west of the Golden Valley the ground rises rapidly, and sheep assume a much greater importance. In the aggregate, store cattle are, however, produced in large numbers on these border farms. The farm buildings in the area are badly constructed.

There are 5,710 cows and 11,730 other cattle in this district, making a total of 17,440. With the exception of a few large dairy farms in the area, the majority of the dairy cattle are kept for the production of farmhouse butter and the rearing of calves. The herds are self-contained, and the estimated incidence of tuberculosis will be approximately 5 per cent. for the dairy cattle and no higher than 2 per cent. for the other cattle.

There are three markets in the area, all of which are only held periodically. Ewyas Harold Market now only takes place about three times a year and then only for the sale of store sheep. Peterchurch Market is held each month for the sale of store cattle, and only stock produced in the area is sold in the market. Longtown Market is held about twice a year, but very few stock are ever present. A market is also held outside the area at Hay, Brecknockshire, and is attended by some of the farmers in this area. The district is suitable for declaring as an eradication area for tuberculosis, and the markets in the area would suffer no hardship by the prohibiting or regulating the movement of cattle into the area, since the district is mainly concerned with the rearing of store cattle.

Hereford City and Hereford Rural District.

The land in this district is generally good, and cattle predominate. There are 6,059 dairy cattle and 11,303 other cattle, making a total of 17,362. Some of the pastures are sufficiently good (and continue to be used) for fattening purposes. Many of the bigger farmers also continue to fatten their cattle in the yards in winter. Many of the milk producers in the district find an outlet for the milk by retail in the City of Hereford. Most of the small farmers and smallholders and a few of the bigger farmers have gone over to milk production, and those who do not supply the City of Hereford send their milk chiefly for manufacture to a factory near Leominster.

The dairy premises are amongst the best in the county. There are a number of small butter-producing farms and farms which still rear calves in the area. The estimated incidence of tuberculosis is approximately 40 per cent. for the dairy cattle and no higher than 5 per cent. for the other cattle.

The great central market of Hereford is the only one held in the district. The examination of the market returns for 1936 showed that the marketing of the livestock of Herefordshire is being gradually centralised in Hereford. More than one-quarter of a million head of stock have been offered for sale in this market during the past year, and it is one of the most up-to-date and progressive markets in the country. Any suggestion likely to be of benefit to the market is always considered by the owners—the Hereford Corporation. The market is also extensively used by farmers from Brecknockshire and Radnorshire, and both of these two counties are probably suitable for inclusion in an eradication area in conjunction with the greater part of Herefordshire.

If a large part of Herefordshire is to be declared as an eradication area for tuberculosis, the district around Hereford would have to be included, although

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the incidence of tuberculosis is relatively high. Free movement of stock into Hereford Market must be permitted, and although the cost of eradication must be high for the area, yet it should not be prohibitive when considered in relation to the great advantages to be gained by permitting the free movement of stock for sale in the principal market of the county. Moreover, the high incidence of the disease is mainly situated in about one hundred farms in the district.

Kington Urban and Rural District.

Most of the land in this district is upland, but here and there excellent lowland pastures are to be found within its boundaries. The district is mainly notable for its sheep farming, but numbers of store cattle are produced in it. Very few of the farmers in this part of the county have as yet taken up milk production. The farm buildings are not suitable for the production of high-grade milk. There are 3,424 dairy cattle and 7,084 other cattle, making a total of 10,508 in the district. The majority of the dairy cattle are used for calf-rearing and the production of farmhouse butter. A few dairy farms are situated around Kington for the supply of the urban district. The incidence of tuberculosis is low and will be no higher than 5 per cent. for the dairy cattle and 2 per cent. for the other cattle. Kington market is the only one held in the district, and sales take place every fortnight. The market is also an important market for a part of Radnorshire. The great Kington sheep sales each autumn dispose of about 40,000 sheep, although the fortnightly regular market is losing stock to Hereford. This district is suitable for declaring as an eradication area and no hardship would result providing Radnorshire was included in the area. The incidence of tuberculosis in Radnorshire will be no higher than in the Kington district.

Ledbury Urban and Rural District.

In this district is to be found a considerable acreage devoted to hops and fruit. Hop and fruit growers do not as a rule take up milk production. Many hop growers have continued to fatten cattle in the yards if only to provide the necessary farmyard manure for their hops. Nevertheless, a number of milk producers are to be found in this area, and they are mainly situated around Ledbury and to the east of Ledbury. Milk production is chiefly confined to the smaller farms and smallholdings. The farm buildings are fairly good in this area.

There are 3,999 dairy cattle and 7,275 other cattle, making a total of 11,274 in the district. The estimated incidence of tuberculosis is about 15 per cent. for the dairy cattle and about 3 per cent. for the other cattle.

Ledbury is the market town for the district, and it is well patronised throughout the year by the farmers of the area as well as others from Gloucestershire and Worcestershire. Practically no dairy cows are ever offered in this market. The cattle sold are mostly fat and store stock. No hardship in the movement of stock would result if the district was declared an eradication area for tuberculosis.

Leominster Borough, including the Outparish, Leominster and Wigmore Rural; and Weobley Rural Districts.

These districts cover an area which has long been famous for the excellent beef cattle which they have produced. The store cattle sales held in Leominster are notable for the large numbers of stock entered in them for disposal to the fattening areas in other parts of England, or to farmers in the county for finishing.

The photograph (Fig. 2) shows a portion of the Leominster Store Market, which was taken at one of the great annual May sales when over 2,500 store cattle change hands. It will be seen from the photograph that the Hereford breed of cattle predominates in this market. The market is a good one, and is the only one held in this area. Many farmers around Leominster and to the east and north-east of the town have, however, taken up milk production in recent years. Much of the milk produced goes for retail consumption in Birmingham and the surrounding area. The remainder goes to the factory recently established at Ford Bridge, near Leominster, a factory which will probably lead to increased milk production in these districts and also in the Kington District. Such increased milk production without the control of the movement of stock, will increase the tuberculosis in the area.

Several of the milk producers in the area covered by the Leominster Rural District have qualified for tuberculin-tested milk licences, and have shown that by adhering to the principles on which Hereford cattle farming was based, dairy herds can be most successfully kept free from tuberculosis. The farm buildings in the area are not good and are not very suitable for milk production. There are 813 dairy cattle and 2,035 other cattle in Leominster Borough, including the Out-parish, making a total of 2,848. The corresponding figures for the Leominster and Wigmore and Weobley Rural Districts are 7,451 and 4,186 dairy cattle, and 13,534 and 8,789 other cattle, making totals of 20,985 and 12,975.

The incidence of tuberculosis is relatively high in the Leominster Borough, including the Out-parish part of the district, and the estimated amount of disease is approximately 40 per cent. of the dairy cattle and 5 per cent. of the other cattle. In the adjoining rural districts the dairy cattle are mostly kept for calf rearing, and the incidence of tuberculosis is no higher than 5 per cent., and as low as 2 per cent for the other cattle in the area. This area is in every way suitable for declaring as an eradication area for tuberculosis. A certain amount of expense would be incurred on the slaughter of stock in the Leominster Borough district, but the disease is mainly situated in about 20 farms in this part of the area, and he desirability of free movement of stock in the area compels its inclusion if the adjoining area was an eradication area for tuberculosis.

Ross Urban and Ross and Whitchurch Rural District.

This district cover an area in which occurs proportionately by far the greatest amount of arable land in the county. The growing of arable crops for sale is one of its most important farming activities. Combined with this degree

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of arable farming, the bigger farmers rear numbers of calves for ultimate sale as store cattle. From two to five calves are reared by each cow, and therefore many calves have necessarily to be purchased. The cows used for calf-rearing are mostly shorthorn, and in consequence the incidence of tuberculosis amongst store cattle of the district is higher than in most of the other areas in the county. Many of the smaller farmers and smallholders have taken to milk production, and most of this milk finds its way to Gloucester. There are 4,672 dairy cattle and 8,822 other cattle in the area, a total of 13,494 cattle, and it is estimated that 20 per cent. of the dairy cattle in the district would react to the tuberculin test, and approximately 5 per cent. of the other cattle. The dairy premises in the Ross district are good.

Ross is the market town for the district, but the market is midway between Gloucester, Ledbury, Hereford and Monmouth markets, and it is losing stock to these markets. There is also a store-cattle sale held each spring and autumn at Broad Oak, Garway.

There are certain parishes in this area where the incidence of tuberculosis is no higher than in the adjoining Dore and Bredwardine district, and therefore they are equally suitable for declaring as an eradication area for tuberculosis. The part of the area bordering on Gloucestershire is extensively engaged in dairying, and the incidence of tuberculosis proportionately higher. Fortunately, however, most of the farmers in the area, which is free of tuberculosis, market their stock in Hereford, whilst the remainder make use of Gloucester market. No marketing difficulties would therefore arise in declaring part of this district as an eradication area.

Discussion.

A review of the several districts in the county of Hereford justifies the view that apart from the Bromyard area, the purchase of milking cows from outside the county has not developed sufficiently to prejudice the position very much so far as the incidence of tuberculosis is concerned. The summary of the estimate made of the incidence of tuberculosis likely to be found in each district in Table V shows that it should not prove difficult or unduly expensive to make the whole of the county an eradication area for tuberculosis. An estimate of 9 per cent. of the total cattle likely to be affected in the county is put forward, and if the Bromyard area is excluded, the figure becomes as low as 6.9 per cent. This estimate may appear to be unduly optimistic owing to the relatively small number of cattle which have been subjected to the tuberculin test as compared with the total cattle in the county (2.4 per cent.); only the results of a detailed survey will show whether this estimate is substantially correct, but the author has no reason to believe that the estimate he has made does not represent the true position.

The eradication of tuberculosis in Herefordshire is chiefly a matter of reverting to the old principle of cattle management in existence in the county before milk production became established. It is probable that from 60–75 per cent. of the

TABLE V.

THE TOTAL NUMBER OF DAIRY CATTLE, OTHER CATTLE AND TOTAL CATTLE IN THE DISTRICTS OF THE COUNTY OF HEREFORD, AND THE ESTIMATED NUMBER OF CATTLE IN EACH DISTRICT WHICH WOULD REACT TO THE TUBERCULIN TEST.

County district.	Dairy cattle.	Other cattle.	Total	Percentage estimate of Tubercular infection.			Estimated number of reactors to the T.T., to nearest 50.		
				Dairy cattle.	Other cattle.	Total.	Dairy cattle.	Other cattle.	Total.
Bromyard Urban and Rural ...	5,743	9,592	15,335	60	8	27	3,450	750	4,200
Dore and Bredwardine Rural ...	5,710	11,730	17,440	5	2	3	300	250	550
Hereford City and Rural	6,059	11,303	17,362	40	5	17	2,400	550	2,950
Kington Urban and Rural	3,424	7,084	10,508	5	2	3	150	150	300
Ledbury Urban and Rural	3,999	7,275	11,274	15	3	7	600	200	800
Leominster Boro' including the Out-Parish	813	2,035	2,848	40	5	14	300	100	400
Leominster and Wigmore Rural ...	7,451	13,534	20,985	5	2	3	350	250	600
Ross Urban and Ross and Whitchurch Rural	4,672	8,822	13,494	20	5	10	950	450	1,400
Weobley Rural	4,186	8,789	12,975	5	2	3	200	200	400
Totals	42,057	80,164	122,221	21	4	9	8,700	2,900	11,600

cattle in the county are still managed along these lines. The incidence of tuberculosis amongst these is low, and while amongst the remainder it has not yet reached alarming proportions, the position is bound to get worse if milk producers do not grasp the fact that what they should not do is to follow the example of the older milk-producing areas. What is needed is a deeper appreciation of the virtues of the old Herefordshire style of cattle farming and its translation into practice in the case of the dairy herds. Certain milk producers have proved that it can be done very successfully. It must be admitted, however, that owing to the extensive use of Hereford bulls for crossing in the dairy herds, it is difficult at present for some of these herds to obtain replacement of their stock. The author is of the opinion that calves could still be admitted into the area if they are tuberculin-tested soon after their arrival. It would, however, be more desirable if the owners of dairy herds would use high-grade dairy bulls and become absolutely self-contained. Should the price of fat cattle improve in the very near future, many of the present dairy farmers will abandon milk production and return to the rearing and feeding of beef cattle, and if the agricultural industry is properly balanced to ensure that no branch is to suffer at the expense of another, the eradication of tuberculosis in Herefordshire could be accomplished in not more than ten years, and in five years at least three-quarters of the county could be declared an attested area for tuberculosis.

Summary.

The view is put forward that the incidence of bovine tuberculosis in Herefordshire is very low. An estimate of about 9 per cent. of reactors to the tuberculin test amongst the total cattle population of the county is suggested.

The majority of the cattle in the county, estimated at 85,000, are either pure-bred Hereford cattle or Hereford Shorthorn cross. The remainder, estimated at 35,000, are dairy cattle, mainly Shorthorns. The Hereford cattle and their crosses are mainly kept in self-contained herds.

The incidence of tuberculosis amongst the native Hereford beef cattle and their crosses is low, and of 1,216 cattle in fifteen farms, only 34 (2.79 per cent.) reacted to the test. These farms subjected to the tuberculin test are considered to be representative of the beef cattle of the county.

The incidence of tuberculosis amongst the dairy cattle is estimated at 21 per cent. of reactors to the tuberculin test. This estimate is put forward as the result of tuberculin testing 1,737 dairy cattle in fifty farms, when 411 cattle reacted to the test (23.66 per cent.). These farms are considered to be representative of the dairy cattle in the county, and the view is held that the incidence of tuberculosis is very low in at least half the herds of dairy cattle.

The county of Hereford, except for the Bromyard area, is suitable for declaring as an eradication area for tuberculosis under the Agriculture Act, 1937.

The farms with the highest incidence of tuberculosis are nearest the towns and have been dairying for a considerable period.

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The incidence of tuberculosis in the Bromyard area is estimated at 27 per cent. of the total cattle (60 per cent. of the dairy cattle).

ADDENDUM.

Since writing this paper the author has obtained provisional figures showing the numbers of cattle as returned on June 4th, 1937, in Herefordshire, but there appears to be little alteration since 1933. The 1937 figures do, however, for the first time set out the respective numbers of beef and dairy cattle in the county, but many of the cattle which are classified as dairy cattle are in fact Hereford or Hereford Shorthorn cross, kept for the production of farmhouse butter and for calf rearing. The figures are, however, set out below for information :

DAIRY CATTLE—		
Cows and heifers in milk...	17,731	
Cows in calf, but not in milk	3,719	
Heifers in calf, *with first calf*	3,253	
Bulls being used for service	542	
Bulls (including bull calves) being *reared* for service	112	
Other cattle—		
Two years old and above	2,126	
One year old and under two	10,115	
Under one year old, for *rearing* (excluding bull calves being reared for service)	11,508	
Calves intended for slaughter as calves	524	
		49,630
BEEF CATTLE—		
Cows and heifers in milk	12,817	
Cows in calf, but not in milk	1,945	
Heifers in calf, *with first calf*	1,765	
Bulls being used for service	709	
Bulls (including bull calves) being *reared* for service ...	756	
Other Cattle—		
Two years old and above	12,092	
One year old and under two	22,123	
Under one year old, for *rearing* (excluding bull calves being reared for service)	19,093	
Calves intended for slaughter as calves	247	
		71,547
Total dairy and beef cattle		121,177

There are 41,230 cows and heifers in milk, cows in calf and heifers in calf, and 79,947 other cattle, compared with 42,057 and 80,164 in 1933.

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AGRICULTURAL RESEARCH COUNCIL—PURCHASE OF A FIELD STATION.

THE Agricultural Research Council, acting under the direction of the Committee of the Privy Council for the Organisation and Development of Agricultural Research, and after consultation with the Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland, have purchased from Mr. Alfred Barclay the Compton Manor Estate of about 1,500 acres, on the Berkshire Downs, about sixteen miles to the west of Reading.

The objects of the Council in establishing a Field Station of their own are two-fold, and have been adopted after a careful survey of existing facilities for agricultural research. Firstly, it is hoped to supply from Compton to Agricultural Research Institutes for experimental purposes animals of known history and free from disease; for these there is a demand which it is becoming increasingly difficult to meet. The Council are therefore also buying from Mr. Barclay his well-known herd of pedigree Ayrshire cattle and his smaller herds of pedigree Friesian and Guernsey cattle, which have for some years been under expert supervision by two veterinary members of one of the Council's own committees. All the cattle are free from tuberculosis, and two of the three herds are free from contagious abortion and mastitis. The herd of some 300 large white pigs, which is being purchased by the Council, is also free from tuberculosis. Secondly, the Council desire to fill a gap in the existing facilities for research by providing opportunities for experiments on a field scale under strictly controlled conditions. Such experiments will be related in particular to those problems of animal health and disease which fundamental and smaller scale investigations conducted at research institutes, or initiated by the Council, may indicate are at a stage requiring the use of animals in larger numbers than can be accommodated at an institute

without detriment to its general programme. A section of the estate will be isolated, and cattle units will be built as soon as possible for the first series of experiments on contagious abortion in cattle. In the course of their management of the estate, the Council will also undertake any experiments with pastures and crops which can usefully be done there.

With the consent of the Medical Research Council, the Agricultural Research Council have appointed Mr. G. W. Dunkin, M.R.C.V.S., D.V.H., at present superintendent of the Farm Laboratories of the Medical Research Council at Mill Hill, to be Director of the Field Station at Compton. Mr. Dunkin will be assisted by a small scientific staff. A laboratory and houses for the breeding and maintenance of stocks of small laboratory animals will be built on the estate.

The need for a field station of the type now to be established arose in the first place from the requirements of the Council's committee on *Brucella abortus* Infection in Animals (Contagious Abortion) and Man. Of this Committee, Sir Joseph Arkwright is the Chairman, and among its members are the principal workers on contagious abortion in Great Britain. The Council's Committee were asked to consider, in the light of the recommendations made by the Committee on Cattle Diseases, under the Chairmanship of Sir Frederick Gowland Hopkins, how best research on contagious abortion could be advanced. The Committee on *Brucella abortus* infection were of opinion that it was desirable to conduct experiments with preventive vaccines and in regard to sources of natural infection on a herd of some 200 cattle, divided into a number of strictly isolated units, under the Committee's own control. It appeared to the Council and to their Animal Diseases Committee that it would be an unwise and an uneconomical step to provide at any one research institute, or at two institutes, accommodation for experiments on a single disease on so large a scale, or to divert the energies of an Institute's staff to so extensive a series of large-scale experiments. The general survey of all agricultural research in progress in Great Britain made by the Agricultural Research Council had brought to light other instances in which facilities for research on a field scale, but under conditions of control which could not be maintained in ordinary farming practice, were required. Furthermore, in the course of the examination of the scheme of contagious abortion experiments, the desirability of increasing the supply of animals which could with confidence be accepted as being free from certain specified diseases, and whose history had been accurately recorded, had emerged. Agreement was therefore reached that the right course was to establish under the Council's control a field station which would fulfil these requirements, and, after a most careful search, the Compton Manor Estate was selected. As the examination of the policy to be adopted in using the estate proceeded, it became evident that opportunities would arise for useful experimentation on crops as well as on animals.

It is the desire of the Agricultural Research Council that their station should be of value to those who are engaged in agricultural research, and it is hoped that from time to time institutes will second members of their staff to work

at Compton with the small resident staff upon problems for which the station's resources are most suitable. If, however, the station is to be put to the best use, the number of major experiments in progress at the same time must be strictly limited. Probably only one series of large-scale experiments upon cattle, pigs or poultry respectively should be undertaken at one time. With cattle the first group of experiments will be concerned with contagious abortion. They cannot be begun until the necessary isolation units have been built, and they may last for five or even for ten years; but the fact that animals known to be free from abortion are available at Compton will shorten the period of experiment by three or four years. With pigs it is under consideration, as a result of consultation with the leading workers in pig research, to limit attention in the first instance to the possibility of reducing the rate of early mortality in small pigs—an urgent problem for pig breeders—in a healthy herd run under good commercial conditions. With poultry, observations will be made to test the hypothesis that susceptibility to fowl paralysis is inherited in certain strains of birds. For this purpose birds of known pedigree, which have been under examination by Professor T. Dalling at the Wellcome Laboratories at Beckenham, will be used.

It is not the intention of the Council to develop at Compton a self-contained research institute. The resident scientific staff will be small and the laboratory will only be large enough to meet the needs of that staff and of visiting workers from the research institutes. Small animals must be bred on a considerable scale for use in connection with experiments on animal diseases at the station. The Council can perform a further useful function by breeding a small surplus of healthy small animals for supply to institutes.

Although the station is to be used for field scale experiments, the fact that a primary object will be to supply large as well as small animals to research institutes is a guarantee that the need for developing work with large animals at the institutes is appreciated by the Agricultural Research Council, who are responsible for giving scientific guidance regarding all agricultural research aided by the Government. The division of functions between the Council's station and the institutes has been clearly though not too rigidly delimited. It is for the field station to provide opportunities for experiments which are at a stage between research institute investigations with small groups of animals and ordinary farming practice. In research this stage is a crucial one.

NATIONAL VETERINARY MEDICAL ASSOCIATION LECTURE SCHEME.

We commend to the notice of the branches of the N.V.M.A. an idea which was put into practical shape with great success and is now being repeated by the Council of the North of England Veterinary Medical Association, whose President is Mr. J. J. McDowall, of Sunderland, and energetic Secretary, Mr. Lyle Stewart, of the Agricultural Department, Armstrong College, Newcastle-on-

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Tyne. An arrangement is made by which there will be given a special short course of lectures on Cattle Diseases. These lectures will be held in the Agricultural Department, King's College, Newcastle-on-Tyne, at 5.30 p.m., as under:

The first lecture, on "The Dissemination of Tuberculosis in the Bovine Body," by Dr. J. R. M. Innis, M.R.C.V.S., was held on November 10th.

Lecture No. 2. *Wednesday, November 24th,* 1937.—"Bovine Tuberculosis—Sources of Infection, with Special Reference to Control and Eradication. Diagnosis of Open Tuberculosis," by Mr. Arthur Gofton, F.R.C.V.S., Edinburgh.

Lecture No. 3. *Wednesday, December 15th,* 1937.—"The Procedure to be Adopted under the Tuberculosis Order and the Milk and Dairies Acts and Orders," by Captain R. Simpson, F.R.C.V.S., D.V.S.M., Carlisle.

Lecture No. 4. *Wednesday, January 12th,* 1938."—The Attested Herd Scheme and Relationship to the Milk Marketing Scheme," by Sir John Kelland, C.V.O., London (or deputy), and Official from Milk Marketing Board.

The fee for the course has been fixed by the Council at 25*s.* Attendance at the course is open to members of the National Veterinary Medical Association or one of its affiliated divisions.

Reviews

A Guide to Veterinary Parasitology for Veterinary Students and Practitioners. By T. SOUTHWELL, D.Sc., Ph.D., and A. KIRSHNER, M.B., Ch.B., D.T.M. London: H. K. Lewis & Co., Ltd. Price 7*s.* 6*d.* net.

A MAJOR problem confronting the student and general practitioner in the ever-widening field of protozoology and helminthology is to acquire that knowledge essential to him in the conduct of his everyday work as a clinician, field officer or meat inspector. Bearing this in mind the authors have succeeded in compiling a work of considerable practical value. The system of classification, descriptions of the parasites, illustrations and tables have all been planned with this object in view. Accordingly the general veterinarian will find the volume refreshing to peruse because of the manner of approach to the subject and will appreciate the work as a ready guide to identification and methods of control. Clinical treatment, as such, falls outside the scope of this treatise, but suitable reference is made from time to time to this subject. The authors rightly lay stress upon diagnosis, and to this end the life histories of many of the important parasites have been graphically illustrated together with comparative illustrations of the parasitic eggs most commonly encountered in field work. The many veterinarians whose time for reading is necessarily limited will find in these tables an easy and readily accessible means of refreshing their knowledge of general helminthology and its related practical problems. It remains to congratulate the publishers on the manner in which the book with its numerous illustrations has been produced.

News

APPOINTMENT OF THE LIVESTOCK ADVISORY COMMITTEE.

THE Livestock Industry Act, 1937, provides for the constitution of a Livestock Advisory Committee with sub-committees for England, Scotland and Wales, for the purpose of giving advice and assistance to the Livestock Commission in the discharge of their functions. The Act further provides that the Committee shall consist of representative members and four additional independent members; and that the representative members shall be persons appointed as representing respectively the interests of: (*a*) persons carrying on in the United Kingdom the business of keeping livestock; (*b*) local authorities in Great Britain; (*c*) persons carrying on in Great Britain the business of effecting sales of livestock by auction, and such other interests concerned in the marketing, or preparation for sale, of livestock or products of the slaughtering of livestock as appear to the Ministers to be immediately affected or likely to be immediately affected by the operation of the Act. After consultation with such bodies as appeared to them to be representative of the various interests concerned, the Minister of Agriculture and Fisheries, the Secretary of State for Scotland, and the Secretary of State for the Home Department have appointed the following to be members of the Livestock Advisory Committee:

Chairman: Sir John Chancellor, G.C.M.G., G.C.V.O., D.S.O. *Other Independent Members*: Sir Francis Boys, K.B.E.; Sir Robert Greig, M.C., LL.D., D.Sc.; R. M. Jones, Esq. *Representatives of Livestock Producers in the United Kingdom*: P. F. Astill, Esq., J.P.; T. G. Clement, Esq.; W. Graham, Esq.; W. J. Hyndman, Esq.; C. T. Joice, Esq.; J. A. D. Pirie, Esq.; J. O. Steed, Esq.; T. Williams, Esq.; J. R. Wood, Esq., J.P. *Representatives of Local Authorities in Great Britain*: Lieut.-Colonel Sir Merrik Burrell, Bt., C.B.E.; A. Chadwick, Esq.; J. H. Dickson, Esq.; R. W. Hastings, Esq.; E. A. Hornsby, Esq.; Professor J. T. Share Jones, M.D. (V.h.c.), D.V.Sc., M.Sc., F.R.C.V.S.; Lord Provost Robert Nimmo; Captain R. J. Thomson; Lieut.-Colonel C. W. Whitaker, M.A. *Representatives of Livestock Auctioneers in Great Britain.*—H. F. Finn-Kelcey, Esq., F.S.I., F.A.I.; D. S. Hutcheson, Esq., F.A.I.; F. A. Lloyd, Esq., F.A.I.; Major R. M. Woolley, F.S.I., F.A.I. *Representatives of other interests concerned in the marketing or preparation for sale of livestock and products of the slaughtering of livestock*: Rt. Hon. A. V. Alexander, M.P.; A. A. Bonner, Esq.; C. A. Coggan, Esq.; G. H. Collinge, Esq., O.B.E.; R. Duncalfe, Esq.; T. H. Gill, Esq.; W. R. Hunter, Esq.; G. D. Pool, Esq.; A. Welsh, Esq.; R. Wood, Esq. The Livestock Commission have appointed Mr. R. Ross, M.B.E., to be Secretary of the Committee. The Minister of Agriculture and Fisheries has appointed the following to be members of the English Sub-Committee of the Advisory Committee: Sir Francis Boys, K.B.E. (Chairman); Rt. Hon. A. V. Alexander, M.P.; P. F. Astill, Esq., J.P.; A. A. Bonner, Esq.; Lieut.-Colonel Sir Merrik Burrell, Bt., C.B.E.; A. Chadwick, Esq.; C. A. Coggan, Esq.; G. H. Collinge, Esq., O.B.E.; J. H. Dickson, Esq.; R. Duncalfe, Esq.; H. F. Finn-Kelcey, Esq., F.S.I., F.A.I.; T. H. Gill, Esq.; R. W. Hastings, Esq.; E. A. Hornsby, Esq.; C. T. Joice, Esq.; G. D. Pool, Esq.; S. O. Ratcliff, Esq.; J. O. Steed, Esq.; J. H. Walter, Esq., F.A.L.P.A.; Lieut.-Colonel C. W. Whitaker, M.A.; T. Williams, Esq.; J. R. Wood, Esq., J.P.; R. Wood, Esq., Major R. M. Woolley. The Secretary of State for Scotland has appointed the following to be members of the Scottish Sub-Committee of the Advisory Committee: Sir Robert Greig, M.C., LL.D., D.Sc. (Chairman); D. Brown, Esq.; T. G. Clement,

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Esq.; W. Graham, Esq.; W. B. Hunter, Esq.; D. S. Hutcheson, Esq.; Lord Provost Robert Nimmo; J. A. D. Pirie, Esq.; Captain R. J. Thomson; A Welsh, Esq. The Welsh Sub-Committee will be constituted shortly. The first meeting of the Advisory Committee and of the English Sub-Committee took place on Thursday, October 28th.

Biographical Notes on Members of the Livestock Advisory Committee and the English and Scottish Sub-Committees.

Lt.-Col. Sir John Chancellor, G.C.M.G., G.C.V.O., D.S.O., Chairman of the Livestock Commission; Governor of Mauritius 1911–1916, Trinidad and Tobago 1916–1921, Southern Rhodesia 1923–1928; High Commissioner of Palestine 1928–1931; Chairman Agricultural Marketing Facilities Committees for England and Great Britain.

Rt. Hon. A. V. Alexander, M.P.—Secretary of the Parliamentary Committee of the Co-operative Congress; M.P. for the Hillsborough Division, Sheffield.

P. F. Astill, Esq., J.P.—Member of the Livestock Committee of the National Farmers' Union; Alderman of Leicestershire County Council.

A. A. Bonner, Esq.—Past-President and now Honorary Treasurer of the Livestock Traders' Association of Great Britain.

Sir Francis Boys, K.B.E.—Vice-Chairman of the Livestock Commission; Chairman of the Committee on Abattoir Design, 1934; Principal Director of Meat Supplies, Ministry of Food, 1917–1919.

D. Brown, Esq.—Manager of the Meat Department of the Scottish Co-operative Wholesale Society.

Lt.-Col. Sir Merrik Burrell, Bt., C.B.E., Chairman of the Agricultural Committee of the County Councils Association; President, Royal Agricultural Society of England, 1936; Chairman, Royal Veterinary College; Chairman, Animal Diseases Committee of the Agricultural Research Council; Chairman, Council of Agriculture for England, 1935.

A. Chadwick, Esq.—Secretary of the Northern Market Authorities' Association; Manager of the Markets Department, Manchester.

T. G. Clement, Esq.—Vice-President of the Scottish Chamber of Agriculture.

C. A. Coggan, Esq.—President of the National Federation of Meat Traders' Associations.

G. H. Collinge, Esq., O.B.E.—Past-President of the National Federation of Meat Traders' Associations and Member of the Executive Council.

J. H. Dickson, Esq.—Town Clerk of Chester.

R. Duncalfe, Esq.—Chairman of the National Joint Committee of Animal By-Products Trades; Director of British Glues and Chemicals, Ltd., Member of the Council and Executive Committee of the Federation of British Industries.

Hubert F. Finn-Kelcey, Esq., F.S.I., F.A.I.—Chairman of the Livestock (Emergency) Committee.

T. H. Gill, Esq.—Director of the Co-operative Wholesale Society; Member of the Board of the English and Scottish Joint Co-operative Wholesale Society.

W. Graham, Esq.—Junior Vice-President of the National Farmers' Union of Scotland.

Sir Robert Greig, M.C., LL.D., D.Sc.—Member of the Livestock Commission; Member of the Board of Agriculture for Scotland 1912–1928; Secretary of the Department of Agriculture for Scotland 1928–1934.

R. W. Hastings, Esq.—Clerk and Solicitor of the Spalding Urban District Council.

E. A. Hornsby, Esq.,—Secretary of the Midland and Southern Market Authorities Association ; Superintendent of Markets at Derby.

W. R. Hunter, Esq.—President of the National Association of Wholesale Meat Salesmen of Scotland.

D. S. Hutcheson, Esq., F.A.I.—Past-President of the Institute of Auctioneers and Appraisers in Scotland.

W. J. Hyndman, Esq.—Member of the Executive Committee of the Ulster Farmers' Union.

C. T. Joice, Esq.—Member of the Livestock Committee of the National Farmers' Union.

Professor J. T. Share Jones, M.D. (V.h.c.), D.V.Sc., M.Sc., F.R.C.V.S.—Vice-Chairman of the Wrexham Rural District Council ; Director of the School of Veterinary Science at Liverpool University.

R. N. Jones, Esq.—Member of the Livestock Commission ; Superintending Livestock Officer for Wales of the Ministry of Agriculture and Fisheries, 1920–1935.

F. A. Lloyd, Esq., F.A.I.—Member of the firm of Frank Lloyd & Sons, of Wrexham.

Robert Nimmo, Esq.—Lord Provost of Perth.

J. A. D. Pirie, Esq., Convener of the Livestock Committee of the National Farmers' Union of Scotland and Ex-President of the Union.

G. D. Pool, Esq.—Member of the Home Killed Meat Association.

S. O. Ratcliff, Esq.—Member of the Livestock Committee of the National Farmers' Union and Past-Presi dent of the Union.

J. O. Steed, Esq.—Vice-Chairman of the Central and Associated Chambers of Agriculture and Chairman of its Livestock Committee.

Captain R. J. Thomson.—Convener of Peebles County Council.

J. H. Walter, Esq., F.A.L.P.A.—Chairman of the Agricultural Committee of the Incorporated Society of Auctioneers and Landed Property Agents.

A. Welsh, Esq.—President of the Scottish Federation of Meat Traders' Associations.

Lt.-Col. Cuthbert Wilfrid Whitaker, M.A.— Chairman of the Special Committee, and member of the Cattle Markets Committee of the Corporation of the City of London.

T. Williams, Esq.—Chairman of the Livestock Committee of the National Farmers' Union and Past-President of the Union ; Chairman of the Montgomery County Council.

J. R. Wood, Esq., J.P.—Vice-Chairman of the Livestock Committee of the National Farmers' Union.

R. Wood, Esq.—Vice-President of the Federation of Wholesale Fresh Meat Traders of Great Britain and Ireland.

Major R. M. Woolley, F.S.I., F.A.I.—Vice-Chairman of the Livestock (Emergency) Committee.

FOOT-AND-MOUTH DISEASE.

Notice to Stockowners issued by the Ministry of Agriculture and Fisheries.

DURING the past week or two several new centres of foot-and-mouth disease have appeared in the eastern and south-eastern counties of England, and so far as the Ministry has been able to ascertain there is no direct connection between these various

centres. In these circumstances it is desired to impress upon farmers the need for extreme watchfulness so as to detect any fresh cases of disease in their early stages. The early stages of the disease are the most infective and in view of the great rapidity with which infection can be carried, not only by direct contact between animals, but through human agency, by birds, etc., it is of the utmost importance that the Ministry should be in a position to deal with every case promptly in order to prevent any general spread of the disease. Stockowners and others are required to report at once to the police any suspicious cases coming under their notice, and failure to do so renders them liable to heavy penalties. In cattle the first symptoms to attract attention are the sudden appearance of lameness or slavering at the mouth, or both, while in pigs and sheep it is usually sudden lameness which first attracts notice. The slavering is rarely seen amongst pigs and sheep.

The general Diseases of Animals Orders of the Ministry also require the following precautions to be taken: (*a*) Boiling of animal foodstuffs. All animal foodstuffs, including swill, kitchen or hotel refuse containing animal matter, or which has been in contact with animal matter, must be boiled for at least one hour before it is fed to or brought into contact with animals. (*b*) Meat wrappers must be boiled or otherwise sterilised before being allowed to come into contact with any animal. This applies to packing-cloths, sacking, or any material used for wrapping meat. (*c*) Hay and straw used for packing merchandise, whether home produce or imported, must be effectively destroyed after use, and prevented from coming into contact with animals. (*d*) Trees, shrubs or other agricultural products packed in hay and straw must not be taken into any market or sale yard where animals are exposed. (*e*) The feeding to animals or use as bedding for animals of any feeding stuffs or material which has been packed or contained in any red striped wrapper, that is, one used for imported meat, is prohibited.

IMPORTED POULTRY AND EGGS.

THE special attention of all poultry keepers, particularly those who may import poultry and hatching eggs from abroad, is drawn to the requirements of the Poultry and Hatching Eggs (Importation) Order of 1936, which controls the importation of poultry and eggs intended for hatching. Failure to comply with these requirements, which are briefly indicated below, renders the responsible persons liable not only to great inconvenience and expense, due to difficulties and delay in delivery of the birds or eggs, but also to heavy penalties for infringements of the law. This Order, which has been in force since the beginning of the current year, prohibits the landing in Great Britain of live domestic fowls, turkeys, geese and ducks, if they have been brought from any country other than Ireland, the Channel Islands, or the Isle of Man, unless their landing has been authorised by special licence previously obtained from the Ministry of Agriculture and Fisheries or, in the case of consignments of poultry (other than geese) not exceeding twenty-one birds, unless they are accompanied by a veterinary certificate of the prescribed kind. The Order also prohibits the landing in Great Britain from any other country except Ireland, the Channel Islands, or the Isle of Man, of day-old chicks of domestic fowls or the eggs of domestic fowls intended for hatching, unless the chicks or eggs, as the case may be, are accompanied by a veterinary certificate. The veterinary certificates required for both poultry and hatching eggs must be signed by authorised officers of the Government of the country of origin. Certificates issued by other veterinary surgeons will not be acceptable. Copies of the Order, which contains specimens of the veterinary certificates required, and any other information regarding this Order, may be obtained from the Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W.1.

INSPECTION OF POULTRY AND POULTRY PRODUCTS.

THE veterinary profession should be particularly interested in the inspection of dressed poultry carried on under the supervision of the Bureau of Agricultural Economics, United States Department of Agriculture. This work began in 1928. It is a voluntary service as far as the Government is concerned, but several cities have ordinances requiring inspection of drawn poultry and canned poultry products. In the inspection of poultry the examination of each poultry carcase and the eviscera is required. The equipment used is similar to that used in inspecting hogs in a large packing house. In 1936, over 33,000,000 pounds of poultry was inspected and about 700,000 pounds condemned. The services of graduate veterinarians are required in the inspection of poultry. The inspection work service bids fair to expand considerably because of the recently awakened interest in the merchandising of full-drawn quick-frozen poultry. This type of poultry offers certain advantages in the way of decreased cost of handling, an inspected product and a more attractive product from the standpoint of retail sale, and should therefore be prepared in constantly increasing amounts. Much of this should therefore increase the amount of poultry inspection work considerably.—*Veterinary Medicine.*

BELFAST CITY VETERINARIAN'S REPORT FOR 1936.

CATTLE killed, 47,377; sheep and goats killed, 54,563; pigs killed, 8,856; total, 110,796. Increases over 1935: cattle, 1,743; sheep, 1,123. Decreases: pigs, 4,632; goats, 103. Percentage destroyed as unfit for food (all causes) = 0.063 per cent. Tuberculosis in cattle caused 65 per cent. of the seizures, an increase of 2 per cent. over 1935, and a loss to butchers of £50 per week. Or the total carcase seizures for this disease 371 were cows over six years old. Six heifers and 150 oxen were between one and three years old, while 16, or 57.67 were from three to six years old. All country-killed meat must be deposited for examination at the public abattoirs.

Cows and Cowsheds.—There are 991 cows in the City area stalled in sixty-one cowsheds. Five were dealt with under the Tuberculosis Order. A number of Grade C producers were transferred to Grade B. All animals are stunned by mechanically-operated instruments. All animals employed by the City were kept under veterinary supervision.

ROYAL ARMY VETERINARY CORPS.

ON account of the reduction in the number of horses used in the British Army, and the consequent reduction in the personel of the officers of the R.A.V.C., the War Office authorities have decided that the head of the Department will now hold the rank of Brigadier instead of Major-General, whilst acting as Director-General of the Army Veterinary Services. The place of Major-General Tapley, who is now due for retirement, will be taken by Colonel Charles Allison Murray, who graduated from Dublin Veterinary College in 1908.

LONG and Bliss report remarkable success in treating gas gangrene with sulfanilamide (prontosil), the action of this new chemical against the Welch bacillus being comparable to its effect on streptococci, pneumococci and gonococci.—*Veterinary Medicine.*

FROM the tissue of the pancreas of the pig a substance has been isolated which inhibits the growth of the type of malignant cancer in chickens known as "chicken tumour I." The inhibiting action is definitely associated with the unsaturated fatty-acid fraction of the pig pancreas.—*Veterinary Medicine.*

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Correspondence

ANNUAL REPORT OF THE WEST SUSSEX COUNTY COUNCIL.

To the Editor of THE VETERINARY JOURNAL.

SIR,—In the review of Dr. Gordon's Annual Report for West Sussex County Council, the doctor calls our attention to the fact that West Sussex stands fourth in the country as far as the percentage of accredited producers is concerned, and thus it has not the fewest accredited herds of *any county* as might be inferred from our review. The only county in England and Wales which has a higher percentage of tuberculin-tested herds than West Sussex is Berkshire.—I am, Sir, yours faithfully,

G. MAYALL.

24, Pool Street,
Bolton, Lancs.

Obituary

THE LATE PRINCIPAL ORLANDO CHARNOCK BRADLEY, M.D., D.Sc., F.R.S.E., Hon. F.R.C.V.S.

THE death of Principal Charnock Bradley has come as a terrible shock to the profession—as unexpected as it is to be lamented—just at a time when his master hand was most required to take advantage of the opportunity afforded by the sudden awakening of the Government to the requirements of Veterinary Education, and to guide the arrangements now being made to bring the Dick College into line with the other veterinary teaching institutions of the world. Born in 1872, Charnock Bradley graduated twenty years later from the New Veterinary College in Edinburgh, where his old teacher, Principal W. Williams, had already discovered his reliability of character and his qualifications for academic work; but it was at the Royal (Dick) College in Clyde Street at which he was to make his name as the teacher of anatomy, and eventually, in 1911, as Principal. In the same year Professor Bradley was appointed as Lecturer in Comparative Anatomy in the University of Edinburgh. During his earlier years he also studied human medicine, being awarded the Goodsir Fellowship and obtaining his M.D. in 1905.

His work for the profession is too well known to everybody to need mention, and the trust and respect in which his name was held is illustrated by the fact that he was unanimously elected to the Presidentship of the Royal College of Veterinary Surgeons and that of the National Veterinary Association. By his untimely and unexpected death the profession has lost one of its most revered and distinguished leaders and a man whom it will be hard to replace.

DR. RAIMUNDO L. J. MORELLO.

It is with the deepest regret that we have to report the death, in London, of Dr. Morello, graduate in Veterinary and Agricultural Science, who had just arrived as Agricultural Attaché to the Argentine Embassy. Dr. Morello, after some time spent

in Reading, studying the dairy industry, returned to Argentina, where he graduated as a Doctor in Veterinary Science and subsequently made a great name for himself in the Government service, with the result that he was sent to the Embassy in this country to assist Dr. Garcia Arias. During the short period he had been in London he endeared himself to all with whom he came in contact, and it is not too much to say that, had he lived, he would have been one of the most popular officers that Argentina had ever sent to this country. Our deepest sympathy is offered to his family, relations, and to his many friends both in this country and in Argentina.

Personal

CONGRATULATIONS to Mr. G. W. Foote, of Guernsey, who this month has celebrated his Diamond Jubilee as a Veterinary Surgeon. Mr. Foote commenced in practice in Guernsey on November 12th, 1877, and there is no man more respected—not only amongst the very large *clientèle* which he has built up, but amongst his neighbours and colleagues. He is one of the remaining sixteen existing practitioners who were registered under the Veterinary Surgeons Act of 1881, and he is still in good health and active practice.

A PARTY of owners, trainers and jockeys, with Mr. W. Jarvis, the King's trainer, in the Chair, entertained our colleague, Mr. W. Bambridge, M.R.C.V.S., at the new Subscription Rooms Club at Newmarket at a farewell gathering at which a presentation, illustrative of their goodwill and friendship, was made to him. Mr. Bambridge is well known in Newmarket, as for a number of years he acted as assistant to Mr. Brayley Reynolds. He has now taken up practice at Marlborough in Wiltshire.

Publishers' Notices

All communications should be addressed to 7 & 8, Henrietta Street, Covent Garden, London, W.C. 2. Telephone: Temple Bar 8568. Telegrams: "Baillière Phone, London."

Letters for the JOURNAL, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements) should be addressed to the Editor.

Copy of advertisements should be in the hands of the publishers—Baillière, Tindall and Cox—not later than the 25th of the month, or if proof is required, not later than the 23rd.

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